

T H E

China, Military Innovation, and the
Rise of the West in World History

Tonio Andrade

G U N P O W D E R

「美」欧阳泰——著 张孝铎——译

世界史上的中国军事格局

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The Military Revolution

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然而，在19世纪下半叶，随着工业革命的进行，欧洲国家开始大规模地移民到美洲。这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。[19]

在19世纪下半叶，随着工业革命的进行，欧洲国家开始大规模地移民到美洲。这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。[20] 1350—1450年，欧洲国家开始大规模地移民到美洲。这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。10%的人口在15—30岁之间，30%的人口在30—60岁之间。[21] 这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。[22]

1450—1550年，欧洲国家开始大规模地移民到美洲。这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。15—80岁的人口在16—1450—1550年之间，这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。[23]

16—50岁的人口在16—50岁之间，这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。[24] 1550—1700年，欧洲国家开始大规模地移民到美洲。这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。Age of Parity 1550—1700年，这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。[25]

Great Military Divergence 1839—1842年，这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。

18—1760—1839年，这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。[26] 1760—1839年，这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。——这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。“”这一过程不仅改变了美洲的人口结构，也深刻影响了美洲的经济发展。

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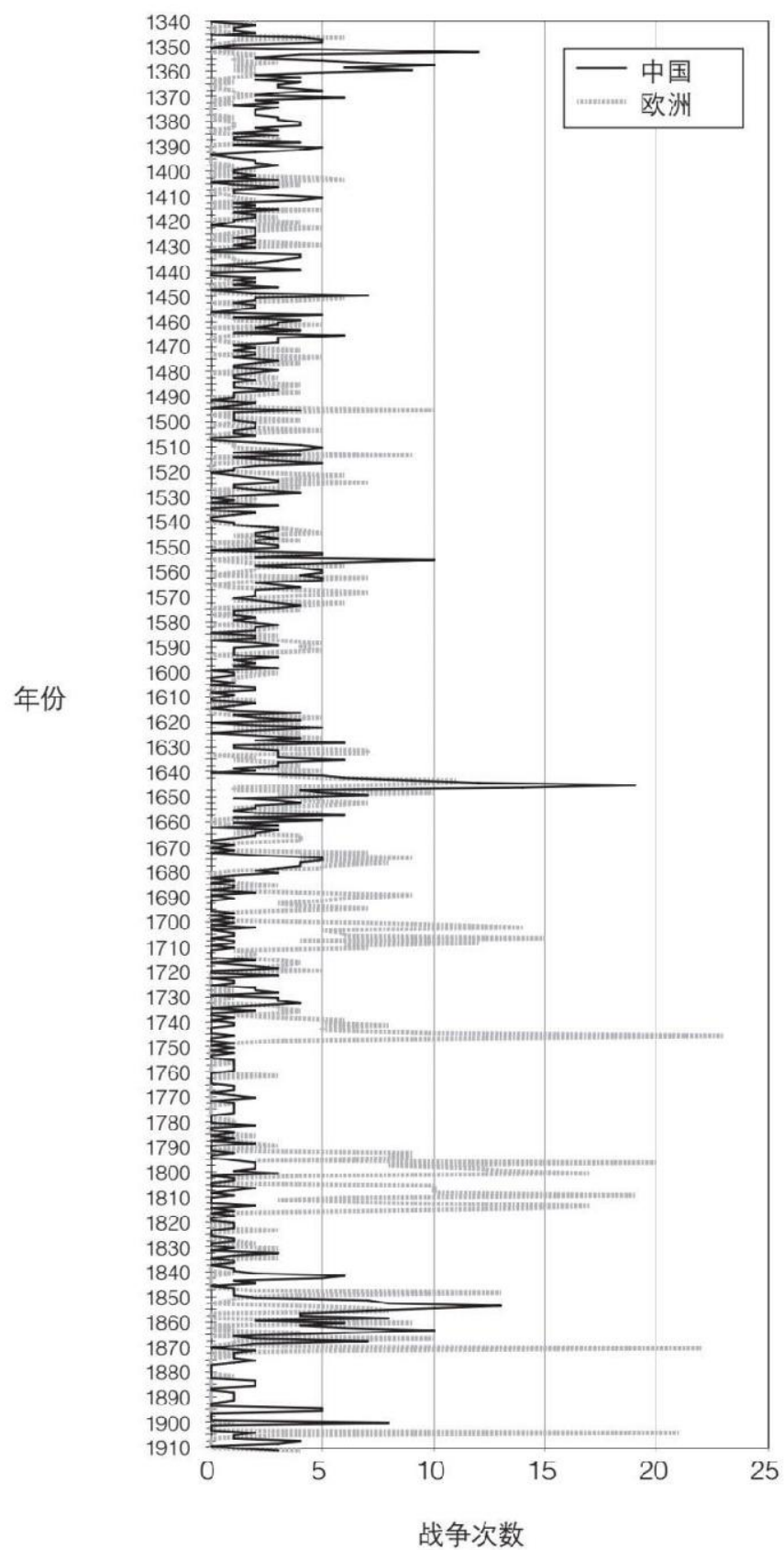


圖1 中國軍事史

中國軍事史研究，目前尚無一部系統、權威的專著。2000年，美國軍事史學家在《Encyclopedia of Military History》中，

對中國軍事史進行了系統、權威的總結。該書認為，中國軍事史可以分為三個時期：先秦、618—1279年、1279—1911年。其中，618—1279年為中國軍事史的繁榮時期，[30]

1279—1911年為中國軍事史的衰落時期。1450—1550年為中國軍事史的復興時期，1760—1839年為中國軍事史的衰落時期。

中國軍事史的研究，目前尚無一部系統、權威的專著。[31] 中國軍事史的研究，目前尚無一部系統、權威的專著。[32] 中國軍事史的研究，目前尚無一部系統、權威的專著。[33] 中國軍事史的研究，目前尚無一部系統、權威的專著。[34] 中國軍事史的研究，目前尚無一部系統、權威的專著。[35] 中國軍事史的研究，目前尚無一部系統、權威的專著。[36]

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中國軍事史的研究，目前尚無一部系統、權威的專著。1760—1839年為中國軍事史的衰落時期。1839—1911年為中國軍事史的復興時期。1911—1949年為中國軍事史的衰落時期。1949—1979年為中國軍事史的復興時期。1979—1999年為中國軍事史的衰落時期。2000—2019年為中國軍事史的復興時期。2020—2029年為中國軍事史的衰落時期。

中國軍事史的研究，目前尚無一部系統、權威的專著。1911—1949年為中國軍事史的衰落時期。1949—1979年為中國軍事史的復興時期。1979—1999年為中國軍事史的衰落時期。2000—2019年為中國軍事史的復興時期。2020—2029年為中國軍事史的衰落時期。Mark Elvin, Kent Deng

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perspectives” Pomeranz, *Great Divergence*, 8; Wong, *China Transformed*, 1–7. See the discussion in Cohen, *China Unbound*, 5–6.

[9] 中國人對“大分流”的解釋，參見Yong Zhao, *Who’s Afraid*, 35。參見Malanima, Pre-modern, 64; Smith, Dragon, 17。參見“Development and Spread,” 819–20。參見Lu Xun, “Dian,” 15。

[10] 參見Archer et al., *World History*, 194–98。參見Neiberg, Warfare, 38–41。參見Dupuy, Evolution, 91–168, see esp. 92–95。參見Rober Marks, Origins, 58–59 and 156。See Marks, Origins, 58–59 and 156。

[11] 參見

[12] 參見The Spirit of the Laws, book XVII, pt. 6, Montesquieu, Spirit, 269; Weber, General Economic. On Marx and Engels’s “Asiatic Mode,” see McFarlane, Cooper, and Jaksic, “Asiatic,” pts. 1 and 2。

[13] Diamond, *Guns* (esp. “Epilogue” and “2003 Afterword”); Wallerstein, “Rise”; Landes, Wealth; Parker, *Military Revolution*。參見Jones, European Miracle; Tilly, Coercion; Vries, “Governing Growth”; Turchin et al., “War, Space”; Cosandey, Secret; Hoffman, *Why Did*。

[14] Mo, “Effective Competition”; Rosenthal and Wong, *Before and Beyond*。

[15] See Hartman, “Chinese,” esp. 38–40, and Levine, “Review of Yuri Pines.”

[16] Hui, War; Parker, *Military Revolution*。

[17] Parker, *Military Revolution*, 2–4。參見

[18] Sun Laichen, “Century.”

[19] Snooks, *Dynamic Society*, 315–24; Mielants, “Europe and China.”

[20] Parker, Cambridge, 5–8。

[21] 參見

[22] Sun Laichen, “Ming-Southeast Asian,” 31。 “火藥革命” 參見“Gunpowder Revolution”; McNeill, Pursuit; and Hodgson, *Venture* (particularly vol. 3)。參見Streusand, *Islamic*。參見Stephen Haw, “Mongol.” 參見1115–1234

[23] 參見Jan van Zanden, “Little Divergence.” 參見16–17。參見Van Zanden, *Long Road*, esp. 95–100。Cf. Gorski, “Little Divergence.”

[24] 參見

[25] See esp. Roy, Military; Ágoston, *Guns*。

[26] 參見19–17–18。參見Wakeman, *Great Enterprise*, 1125–26; Perdue, *China Marches*, 526–

27.

[27] Thompson, *On Global*, 5–14 and 87–111; Levy, *War*, 50–92; Singer, *Correlates*, vol. 1; Cioffi-Revilla, *Scientifi*; and “Bibliographic Essay,” *Correlates of War Project*, www.correlatesofwar.org, retrieved 19 May 2014.

[28] Jacobsen, “Limits,” esp. 388–89.

[29] Dickens, *Works*, 110–13. See Anonymous, *Description*, esp. 8–9. On Dickens’s views about China, see Witchard, *Thomas Burke’s*, 46–48.

[30] Duchesne, *Uniqueness*, 179. See also Ferguson, *Civilization*, esp. 26–33; Landes, “Why Europe,” 11, 14, 15, 21.

[31] David Landes, “Why Europe,” 11, 14, 15, 21. See Ferguson, *Civilization*, 26–33. Cf. Mielants, “Europe and China.” See also Ricardo Duchesne, “Uniqueness,” 173.

[32] Duchesne, “Reply,” 386.

[33] Kelly, *Gunpowder*, 99.

[34] Arnold, *Renaissance*, 25.

[35] Neiberg, *Warfare*, 39. Archer et al., *World History*, 204.

[36] See, for example, “What the Collapse of the Ming Dynasty Can Tell us about American Decline,” *The Week*, 6 March 2014, <http://theweek.com/article/index/257266/what-the-collapse-of-the-ming-dynasty-can-tell-us-about-american-decline>, retrieved 9 March 2014; Dyson, “Case.”

[37] Elvin, *Pattern*; Deng, *Premodern*; SCC7 pt. 2, 209; Rosenthal and Wong, *Before and Beyond*; Brandt, Ma, and Rawski, “From Divergence.”

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[39] Huang, “Sun,” 258.

[40] Huang, “Ming Qing du te,” 77.

[41] See chapters 13, 14, and 15.

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[1] Zhou Mi, “Pao huo” in Zhou Mi, *Gui xin za shi*. “ ” <http://zh.wikisource.org/zh/%E7%99%B8%E8%BE%9B%E9%9B%9C%E8%AD%98>, retrieved 26 September 2012.

[2] Zhou Mi, “Pao huo.”

[3] 1268 SCC5 pt. 7, 50.

[4] 同前註cited in SCC5 pt. 7, 134-35. 同前註“鼠”“ground rat”同

[5] 同前註(1044). 同前註(1506-1521, 1231同前註1044同前註15同前註16同前註1231同前註同前註See SCC5 pt. 7, 20. 同前註vol. 3 (Beijing: Jiefangjun Chubanshe, 1988).

[6] “同前註”同前註“同前註”同前註“同前註”同前註Chan, “Compilation”; and Hartman, “Chinese.”

[7] See Neiberg, Warfare, 39; Morris, Measure, 203; Daly, Rise, 276-77; Kristinsson, Expansions, 258-59; Petrucci, “Pirates,” 63; Delbruck, Dawn, 24; Dupuy, Evolution, 93; O’Connell, Soul, 113-14.

[8] 同前註“9同前註.....同前註.....同前註Fairbank and Goldman, China, 115.

[9] Kuhn, Age, 276.

[10] Deng, Premodern, 322. 同前註15%同前註See Deng, Premodern, 183.

[11] See Chandler and Fox, 3000, 12.

[12] Fairbank and Goldman, China, 89.

[13] Fairbank and Goldman, China, 92.

[14] Ibn Battuta, Travels, 216.

[15] Fairbank and Goldman, China, 89. 同前註Liu, “Song China’s.”

[16] “同前註”同前註Kuhn, Age, 276. 同前註“同前註”同前註“同前註”同前註Mark Elvin to E. L. Jones, John Fairbank, and Gang Deng同前註Hartwell, “Revolution,” and Hartwell, “Cycle.”

[17] 同前註Wright, “Economic Cycle.”

[18] Elvin, Pattern, 86.

[19] Wang Zhen 同前註 *Nong shu* 同前註, cited in Elvin, Pattern, 195.

[20] Jones, *European Miracle*, 202.

[21] Sharaf al-Zamān Ṭāhir al-Marwazī, cited in SCC5 pt. 7, 94.

[22] Emperor Gaozong (1127-1162), cited in Lo, “Emergence,” 499.

[23] See SCC7 pt. 2, 217-24.

[24] 同前註Su, Nan Song, 82ff.

[25] Brace, “Egg,” 696.

[26] Fairbank and Goldman, China, 88

[27] 同前註“同前註”同前註“同前註”同前註“同前註”同前註

[28] 同前註John Haeger同前註“同前註.....同前註Haeger, “1126” , 160.

[29] 阿利·莱文 Ari Levine, "Review of Don Wyatt." See also Wyatt, *Battlefronts*; Di Cosmo, "Introduction"; Wang, *Harmony*. 玛西娅·布特勒 Marcia Butler 参见 Robinson, *Martial*. See Butler, "Reflections." 参见 Robinson, *Martial*.

[30] Wang, *Harmony*, 74.

[31] Wyatt, "Introduction," in Wyatt, *Battlefronts*, 1-11, 1.

[32] See Zurndorfer, "Meaning."

[33] SS, "Bing zhi," cited in Su, *Nan Song*, 82.

[34] SS, juan 197, Bing 11, cited in Su, *Nan Song*, 82.

[35] Smith, "Eurasian."

[36] Smith, "Introduction," 17.

[37] 邓广铭 Deng, *Premodern*, 301-5. 参见 邓广铭, *Premodern* 301-5. 参见 邓广铭, *Premodern* 301-5.

[38] Hartman, "Chinese," 37.

[39] 吕东 Zhongguo Song Liao, 211-12.

[40] Liu and Mao, *Zhongguo Song Liao Jin Xia*, 192.

[41] Liu and Mao, *Zhongguo Song Liao Jin Xia*, 182-85; Galambos, "Consistency."

[42] Liu and Mao, *Zhongguo Song Liao Jin Xia*, 181. 参见 吕东 "Liu and Mao, *Zhongguo Song Liao Jin Xia*, 194.

[43] 参见 Mote, *Imperial*, 256-57.

[44] 维多利亚·蒂-博尔·惠 Victoria Tin-Bor Hui 参见 "Victoria Tin-Bor Hui" 656 参见 Hui, *War*, 51, 54-59.

[45] Ebrey, *Cambridge*, 87.

[46] Ebrey, *Cambridge*, 86.

[47] 参见 Smith, "Introduction."

[48] P.H.H. Vries 参见 "Vries, *Governing Growth*," 90.

[49] Su, *Nan Song*.

[50] Su, *Nan Song*, 92.

[51] Su, *Nan Song*, 90.

[52] See Parker, "Western Way of War," in Parker, *Cambridge*, 1-14.

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[26] Li Gang 李綱 *Jing kang chuan xin lu* 經寇傳心錄 cited in SCC5 pt. 7, 165. Cf. WZC, 21.1044 雷火砲 the thunderbolt bomb 1044 雷火砲 12 雷火砲 Turnbull, *Siege*, 7–8. Cf. SCC5 pt. 7, 165–66.

[27] See Franke, “Chin,” 228–29.

[28] WZC, 21.

[29] 韋內爾 Werner, *Belagerung*.

[30] WZC, 22.

[31] WZC, 21.

[32] Li Dao 李道 and Huang Yizhou 黃一州 *Xu Zi zhi tong jian chang bian shi bu* 續資治通鑑長編 卷 58, cited in WZC, 22.

[33] SCC5 pt. 7, 154.

[34] SCC5 pt. 7, 223–25.

[35] 950 陽宏 “Xiang mo”; Li Yue, “Ming dai huo qi,” 40; and Cheng Dong, “Zhong guo gu dai huo pao.” 950 當守山, Wu wei, 107–8. LX, 27; cf. Haw, “Mongol,” 3.

[36] Tang Shou 唐壽 “De’an shou yu lu” 德安守御錄 traditionally included within Chen and Tang, *Shou cheng*, as juans 3 and 4. See Balazs and Hervouet, *Sung Bibliography*, 237.

[37] Tang, “De’an shou,” juan 4.

[38] 門 “gate house,” “gate tower,” or “barbican tower,” 門 “defensive structure” See Huang, “Defensive Structures,” 51.

[39] Tang, “De’an shou,” juan 4.

[40] Tang, “De’an shou,” juan 4.

[41] Tang, “De’an shou,” juan 4.

[42] Tang, “De’an shou,” juan 4.

[43] Lorge, *Asian*, 36.

[44] “Biography of Chen Gui,” in SS, juan 377, *lie zhuan* 136.

[45] Tang, “De’an shou,” juan 4.

[46] WZC, 28.

[47] Fa, “Effects”; Turnbull, *Hussite*, esp. 23–24; Joregensen, *Niderost*, and McNab, *Fighting*, 108–10.

[48] 周偉強 Zhou Weiqiang, “Ming dai.”

[49] “Biography of Li Bao” 李寶 in SS, juan 370, *Lie zhuan* 129.

[50] Noted in WZC, 27–28.

[51] “Biography of Li Bao” 李寶 in SS, juan 370, *Lie zhuan* 129.

[52] On paddle wheel ships, see SCC4 pt. 2, 418–26. See also SCC4 pt. 3, 476.

[53] SCC5 pt. 7, 165–66.

[54] See Haw, “Mongol,” 8.

[55] Zhao, Xiangyang. 中国航海史 Avery 著 Avery, “Record”; 弗兰克 Franke, Studien. 中国航海史——1206-1207 年蒙古人征服阿拉伯海 Hana, Bericht.

[56] 中国航海史“记录”“词汇” Avery 著 Avery, “Record,” “Glossary.”

[57] Zhao, Xiangyang. Avery’s translation, Avery, “Record,” 66–67.

[58] WZC, 28.

[59] Zhao, Xiangyang. 中国航海史 Avery, “Record,” 77.

[60] Zhao, Xiangyang.

[61] WZC, 28–29.

[62] Yuan Haowen 元好问 Xu yi jian zhi 续夷坚志 (thirteenth century), juan 1, 中国航海史 WZC3, 34.

[63] 中国航海史 Qi, “Zhao.”

[64] Zhao, Xin si, 22.

[65] Zhao, Xin si, 20.

[66] Zhao, Xin si, 23.

[67] Cited in Qi, “Zhao”

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[9] JS, juan 113 (“Lie zhuan No. 51”). Cf. Needham’s translation, in SCC5 pt. 7, 171.

[10] He, Xu dong, juan 5. Part of this is cited in WZC, 31.

[11] He, Xu dong.

[12] WZC, 30.

[13] JS, juan 113 (“Lie zhuan No. 51”).

[14] JS, juan 116 (“Lie zhuan No. 54”) (biography of Pucha Guannu 蒲查貫奴).

[15] JS, cited in SCC5 pt. 7, 225.

[16] JS, cited in SCC5 pt. 7, 225.

[17] JS, juan 116 (“Lie zhuan No. 54”) (biography of Pucha Guannu). See also WZC, 32.

[18] 蒲查貫奴 SCC5 pt. 7, 173.

[19] Goodrich, Short History, 173. Cf. Mote, Imperial, 460.

[20] Feng and Chen, Song shi ji shi, juan 93.

[21] Fang, “Military,” 54.

[22] Chen, Song-Yuan, 100.

[23] 蒲查貫奴 Yang and Wang, Nan Song, 139.

[24] Chen, Song-Yuan, 100–101. 蒲查貫奴 Chen, Song-Yuan, 98–99.

[25] 蒲查貫奴 “蒲查貫奴” Li, Kezhai, cited in SCC5 pt. 7, 174. 蒲查貫奴 WZC, 34.

[26] Li, Ke zhai, cited in SCC5 pt. 7, 174. See also WZC, 34.

[27] 蒲查貫奴 SCC4 pt. 2, 423–24.

[28] SS, biography of Zhang Shun 張順, juan 450, Lie zhuan 209.

[29] SS, biography of Zhang Shun 張順, juan 450, Lie zhuan 209.

[30] Cited in SCC5 pt. 7, 174.

[31] WZC, 35.

[32] 蒲查貫奴 “蒲查貫奴” SCC5 pt. 7, 175.

[33] Haw, “Mongol,” 11. 蒲查貫奴

[34] SS, biography of Zhang Shun 張順, juan 450, lie zhuan 209.

[35] Cited in SCC5 pt. 7, 174.

[36] SS, biography of Zhang Shun 張順, juan 450, lie zhuan 209.

[37] SS, biography of Zhang Shun 張順, juan 450, lie zhuan 209.

[38] Chen, Song-Yuan, 214.

[39] See SCC5 pt. 7, 574.

- [40] Cited in Rossabi, "Reign," 433.
- [41] SCC5 pt. 6, 221.
- [42] Mote, Imperial, 463.
- [43] 元史卷一百一十五
- [44] YS, juan 127, Lie zhuan 14, biography of Bayan 巴顏.
- [45] "Li Yanxian shou xia" 李顯先受下 in Hong Mai 洪邁 Rong zhai wu bi 容齋五筆 juan 6. See LX, 44.
- [46] Mote, Imperial, 464.
- [47] Cited in Wright, "Mongol," 111.
- [48] YS, juan 127, lie zhuan 14, biography of Bayan.
- [49] Wright, "Mongol," 112.
- [50] SS, biography of Ma Ji 馬季 cited in WZC, 35.
- [51] 風日無常windage 風日無常windage 風日無常Watson, Eight Lectures, 62-65.
- [52] SCC5 pt. 7, 9.
- [53] 風日無常windage 風日無常windage 風日無常Watson, Eight Lectures, 62-65.
- [54] SCC5 pt. 7, 233.
- [55] SCC5 pt. 7, 235.
- [56] SCC5 pt. 7, 238.
- [57] 風日無常windage 風日無常windage 風日無常Watson, Eight Lectures, 62-65.
- [58] WZC, 23-24.
- [59] SS, cited in WZC, 33.
- [60] 20 50 風日無常windage 風日無常windage 風日無常Watson, Eight Lectures, 62-65.
- [61] LX, 53.
- [62] Zhong et al., "Nei," 65-67.
- [63] Zhong et al., "Nei," 65-67.
- [64] 風日無常windage 風日無常windage 風日無常Watson, Eight Lectures, 62-65.
- [65] 風日無常windage 風日無常windage 風日無常Watson, Eight Lectures, 62-65.
- [66] 風日無常windage 風日無常windage 風日無常Watson, Eight Lectures, 62-65.

13 [46] [47]

[48] “guns” [49]

50 [50] standard cannon [51] great general cannon 1550 1500 [51]

14 50 15 80 75 [52] 1377 [53] 21 [54] 1500 [55]

2400 [56]

[57] [58] bullet [59] Herbert Franke [60]

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明初太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。

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[1] See, for example, Li, Da Ming; WZC3, 103ff.; Li Yue, “Ming dai huo qi,” 5ff.and 92; WZC5, 85–122.

[2] MSL, Tai zu shi lu, juan 129, Hongwu 13, cited in WZC, 103.

[3] 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。1380—1393 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。18 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。1215000 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。12.5 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。WZC, 103; see also WZC3, 103ff. According to Liew Foon Ming, “during the early Ming period Zhu Yuanzhang had a total of 1,304,923 military men.” Liew, Treatises, 74.

[4] 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。1436-1449 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。15 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。20% 明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。其地舊名順天府，明太祖高皇帝定都燕京，始創大興縣，以居官衙。WZC3, 114.

[5] WZC, 106.

[6] Da Ming hui dian, juan 1936, Gong bu 13, “Huo qi.” Cf. WZC, 75–76.

[7] Da Ming hui dian, juan 1936, Gong bu 13, “Huo qi.”

[8] WZC, 88.

[9] Jiao Yu 焦玉Huo long jing 焦玉 (date unknown). See Huo long shen qi zhen fa 焦玉神氣真法 in Liu Lumin, Zhong guo. On the controversy, see below and also Li, “Huo long”; WZC, 63–66; Xu, Zhong guo bing shu, chap. 10, sec. 2; SCC5 pt. 7, 24–27; and Ho and Ling, “Karyukyo.”

[10] Cited in SCC5 pt. 7, 30–31.

[11] Cited in SCC5 pt. 7, 31.

[12] Cited in SCC5 pt. 7, 31.

[13] See, for instance, Li, “Huo long”; and WZC, 63–66. Cf. Xu, Zhong guo bing shu, chap.10, sec. 2. 明史紀事本末 SCC5 pt. 7, 24–27; and Ho and Ling, “Karyukyo.”

[14] 明史紀事本末 Dreyer, “Poyang.”

[15] 明史紀事本末 “明史紀事本末” WZC, 57.

[16] 明史紀事本末

[17] MSL, Tai zu shi lu, juan 12, guimao year, fourth month (p. 153). Rong, Ming shi, juan 3, contains an identical passage. 明史紀事本末 98.

[18] On this drama, see http://en.wikipedia.org/wiki/Founding_Emperor_of_Ming_Dynasty, 2012 10 12

[19] See Cui, “Nei.” 明史紀事本末

[20] 明史紀事本末 “明史紀事本末” WZC, 73.

[21] WZC, 73.

[22] WZC, 86.

[23] This list is from Qian, “Han Chen,” 103. 明史紀事本末 See Dreyer, “Poyang,” citation on 358n36. 明史紀事本末 WZC, 57.

[24] Qian, “Han Chen,” 103.

[25] Rong, Ming shi, juan 3.

[26] Rong, Ming shi, juan 3. MSL, Tai zu shi lu, juan 12, is quite similar.

[27] Rong, Ming shi, juan 3.

[28] WZC, 57. See also WZC3; cf. LX, 58.

[29] MSL, Tai zu shi lu, juan 12, 1363 [guimao 庚子], fall, seventh month 庚子, Chenzi Day 庚子 [August 30] (p. 158). Identical passage in Rong, Ming shi, juan 3.

[30] MSL, Tai zu shi lu, juan 12, 1363, [guimao 庚子], fall, seventh month 庚子, Chenzi Day 庚子 [August 30] (p. 158).

[31] LX, 99.

[32] Dreyer, “Poyang,” 358n38.

[33] 明史紀事本末 LX, 89–132 60 明史紀事本末

[34] Cited in Dreyer, “Poyang,” 225.

[35] Gu, Ming shi ji shi, juan 3. 明史紀事本末 1658 明史紀事本末

[36] MSL, Tai zu shi lu, juan 12, 1363 [guimao 癸卯], fall, seventh month 庚申月, Jichou day 己丑 [August 31] (p. 159).

[37] MSL, Tai zu shi lu, juan 12, 1363 [guimao 癸卯], fall, seventh month 庚申月, Jichou day 己丑 [August 31] (p. 159).

[38] Dreyer, "Military Origins," 93.

[39] Lorge, Asian, 74. Cf. Lorge, War, 105.

[40] Lorge, Asian, 74; 明朝“倭寇之患” (Lorge, War, 105). 倭寇之患在明朝中叶达到顶峰

[41] Yu Ben 元本 Ji shi lu 集史录 in Qian, "Zhou Zhang."

[42] 明朝城市 Xu, Chinese City, 114. Cf. Mote, "Millennium," 53.

[43] Xu, Chinese City, 113. 明朝城市

[44] Xu, Chinese City, 113.

[45] Lorge, Asian, 74.

[46] Yu Ben, Ji shi lu.

[47] MSL, Tai zong shi lu, juan 21, bingwu year, eleventh month (p. 309).

[48] MSL, Tai zong shi lu, juan 21, bingwu year, eleventh month (p. 309).

[49] 明朝“倭寇” MS, juan 125, lie zhuan no 13, 倭寇“倭寇之患”

[50] Yu Ben, Ji shi lu.

[51] Li Yue, "Ming dai huo qi," 31-32.

[52] See WZC, 73-97; and LX, 106-7. 倭寇——倭寇——倭寇 100-500 倭寇 45-225 倭寇 14 倭寇——“倭寇” 倭寇 1612-1678 倭寇“倭寇”——17 倭寇 70 倭寇 SCC5 pt. 7, 290-92. 倭寇 WZC, 58-63.

[53] Cheng Dong, "Ming dai qian qi," 74. 倭寇之患 Cheng and Zhong, Zhong guo, 238 (figures 11-34) and (cai ban 彩版 30).

[54] Wang Zhaochun, "Hong wu," 183.

[55] Cheng Dong, "Ming dai qian qi," 74; Wang Zhaochun, Zhong guo gu dai bing qi, 170-71. See also Wang Fuzhun, "Gu dai da tie pao," 48.

[56] Xu Mianzhi 许满志 Bao yue lu 包月录 (1359). 包月录 Herbert Franke, "Belagerung," 122-214.

[57] Xu Mianzhi, Bao yue lu, cited in WZC, 56.

[58] Xu Mianzhi, Bao yue lu.

[59] Xu Mianzhi, Bao yue lu. Cf. Franke, "Belagerung," 176. 包月录

[60] Franke, "Belagerung," 213. Cf. Franke, "Siege," 191.

[61] MSL, Tai zu shi lu, juan 24, 1367 (Wu Year 1), sixth month (p. 344).

[62] 1296–1370 1367 “a thousand metal bodies” “gilded Buddhas”

[63] Qian, “Zhou.” WZC, 56. Cf. LX, 56; WZC3, 74.

[64] Yu Ben, Ji shi lu.

[65] <http://www.guoxue123.com/other/gcdg/gcdg/010.htm>, 2012 11 15

[66] MS, juan 123, lie zhuan no. 11.

[67] Qian, “Zhou Zhang.”

[68] Yu Ben, Ji shi lu.

[69] SCC5 pt. 6, 212–13.

[70] MS, juan 125, lie zhuan no 13, “Xu Da”

[71] Yu Ben, Ji shi lu.

[72] MSL, Tai zu shi lu, juan 21, bingwu year, eleventh month (p. 309).

[73] Gu, Ming shi ji shi, juan 4, “Tai zu ping wu” . MSL, Tai zu shi lu, juan 25, Wu 1, month 9, Xinsi day (p. 363).

[74] Gu, Ming shi ji shi, juan 4, “Tai zu ping wu” .

[75] Xu, Chinese City, 115–22.

[76] Yang, “Tai fu.”

[77] Gu, Ming shi ji shi, juan 4, “Tai zu ping wu” . MSL, Tai zu shi lu, juan 25, Year of Wu 1, month 9, Xinsi day (p. 363).

[78] Yang Weizhen (1296–1370), “Tong jiang jun” written ca. 1367 and excerpted in Qian, “Zhou Zhang.”

[79] See WZC, 73–97; and LX, 106–7; SCC5 pt. 7, 290–92.

[80] “” 17 See Wang Fuzhun, “Gu dai da tie pao,” 48 and WZC, 58–63. Lu Wenbao, “Xin fa xian.”

[81] McNeill, “Gunpowder Revolution,” 8.

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“pot de fer à traire garros à feu”
“”[\[26\]](#) “” pot
pot makers——potters
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gun 1861 [\[29\]](#) 9
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「bombarde」は「pallottole」を指す[43]。また「bombarde」は「bombarde」を指す[44]。

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[1] Morillo, Black, and Lococo, War, 237, 259, and 286; and Khan, Gunpowder, 3 and 41. 1274 “.....” Ibn Khaldun, cited in al-Hassan and Hill, Islamic Technology, 112–13. See Cook, Hundred, 63.

[2] Cook, Hundred, 65; and McJoynt, “Appreciation,” 243. Cf. DeVries, “Gunpowder Weapons,” 352.

[3] Allsen, “Circulation,” 275.

[4] “flying fire” See DeVries, “Sites,” 308.

[5] SCC5 pt. 7, 568.

[6] SCC5 pt. 7, 346–47.

[7] Contamine, War, 139.

[8] Hall, Weapons, 42.

[9] 1322 See Angelucci, Documenti, 75; and Gohlke, Geschichte, 11.

[10] MS 92, fol. 70v. Blair, “Milemete,” 7; and DeVries, “Reassessment.” Serdon-Provost, “Débuts.”

[11] Walter de Milemete, “De secretis secretorum Aristotelis” [Concerning the secrets of Aristotle], British Library, London, Add manuscript 47680, image at fol. 44v.

[12] See Blair, “Milemete,” 5.

[13] Blair, “Milemete,” 7; Dondi, “Terzo.”

[14] DeVries and Smith, Medieval Military, 138; Rogers, “Military Revolutions of the Hundred,” 258; Hall, Weapons, 43–44; Contamine, War, 139.

[15] Blair, “Milemete,” 13.

[16] Partington, Greek Fire, 104.

[17] Strickhausen, “Bemerkungen,” 50; Essenwein, Quellen, 8.

[18] Contamine, War, 139.

[19] Strickhausen, “Bemerkungen,” 51.

[20] Blair, “Milemete,” 9.

[21] Bonaparte, Etudes, 357–58; Brackenbury, Ancient, Part I, 18–19.

[22] Petrarch, “De remediis utriusque fortunae,” cited in Brackenbury, Ancient, Part I, 10. “thrown from an infernal instrument of wood” “ligno” “igneo”

[23] Petrarch, "De remediis utriusque fortunae," cited Brackenbury, *Ancient*, Part I, 10.

[24] Hartley and Aldridge, *Johannes*, 90–91.

[25] Contamine, *War*, 138.

[26] Brackenbury, *Ancient*, Part I, 5–6.

[27] Blair, "Milemete," 11.

[28] 1322 See Angelucci, *Documenti*, 75; and Gohlke, *Geschichte*, 11. Smith, "Artillery," 154. 14 LX, 106–7 and 123–25. 1399 Strickhausen, "Bemerkungen," 52.

[29] <http://mis.historiska.se/mis/sok/fid.asp?fid=114743>, 2013 13 DeVries, "Reassessment."

[30] Zhong et al., "Nei."

[31] Tittmann, "Eltzer"; Tittmann, "Guns"; Leibnitz, "Fitting." Smith, *Rewriting*, 115–18.

[32] See Smith, *Rewriting*, 115–18. Leibnitz, "Fitting."

[33] Clephan, *Outline*, 27.

[34] Brackenbury, *Ancient*, Part I, 17; Tout, "Firearms," 670–74.

[35] Tout, "Firearms," 670.

[36] Tout, "Firearms," 670.

[37] Brackenbury, *Ancient*, Part I, 8.

[38] Brackenbury, *Ancient*, Part I, 21.

[39] See Rathgen, *Geschütz*, 6–7 and 151ff.; see also DeVries, "Technology."

[40] Smith, "Artillery," 153

[41] Brackenbury, *Ancient*, Part I, 21.

[42] DeVries and Smith, *Medieval Military*, 144.

[43] Villani, *Seconda*, 185.

[44] See DeVries, "Technology," 290.

[45] Brackenbury, *Ancient*, Part I, 14–17; Tout, "Firearms," 670–71.

[46] Villani, *Seconda*, 186.

[47] Villani, *Seconda*, 186.

[48] DeVries, *Infantry*, 169–70; Prestwich, "Battle," 148.

[49] Anonymous, "Storie pistoresi," 223, http://books.google.com/books?id=ovFVAAAAYAAJ&source=gbp_navlinks_s, retrieved 30 January 2013. Cf. Brackenbury, *Ancient*, Part I, 13. "scoccare" "soccare"

[50] Prestwich, "Battle," 159–252; DeVries, *Infantry*, 155–75; Rogers, *War*.

[51] Burne, *Crecy*, 192–203, and Tout, "Firearms," 670–72; and Brackenbury, *Ancient*, Part I, 13–17.

[52] See Brackenbury, *Ancient*, Part II, 21.

[53] DeVries and Smith, *Medieval Military*, 144; DeVries, "Forgotten Battle."

[54] Ayton and Preston, *Battle*, 154–55.

[55] Anonymous, "Storie pistoresi," 223.

[56] Froissart, *Chroniques*, vol. 5 (1868 ed.), 376.

[57] Froissart, *Chroniques*, vol. 5 (1868 ed.), 377.

[58] Froissart, *Chroniques*, vol. 5 (1868 ed.), 389; Brackenbury, *Ancient*, Part II, 39.

[59] Haldon, "Greek," 291.

[60] Haldon, "Greek," 290.

[61] Reynaud and Favé, *Histoire*, 224. Marcus Graecus 13 "Partington, *Greek Fire*, 50.

[62] "cannons throwing fire" —

[63] See SCC5 pt. 7, 259–62.

研究人員發現，在過去十年中，美國人的平均睡眠時間從1429分鐘減少到1422分鐘。這項研究是由Kelly DeVries領導的，她指出：“睡眠時間的減少可能與現代生活節奏加快有關。”^[27] 此外，研究還發現，睡眠時間的減少與心臟病發作的風險增加有關。^[28]

研究人員還發現，在過去十年中，美國人的平均睡眠時間從1422—1461分鐘減少到15—90分鐘。^[29]

研究人員還發現，在過去十年中，美國人的平均睡眠時間從1453分鐘減少到1500分鐘。這項研究是由Kelly DeVries領導的，她指出：“睡眠時間的減少可能與現代生活節奏加快有關。”^[30] 此外，研究還發現，睡眠時間的減少與心臟病發作的風險增加有關。^[31]

研究人員還發現，在過去十年中，美國人的平均睡眠時間從1432—1481分鐘減少到1500分鐘。這項研究是由Kelly DeVries領導的，她指出：“睡眠時間的減少可能與現代生活節奏加快有關。”^[32] 此外，研究還發現，睡眠時間的減少與心臟病發作的風險增加有關。^[33]

研究人員還發現，在過去十年中，美國人的平均睡眠時間從40分鐘減少到34分鐘。這項研究是由Kelly DeVries領導的，她指出：“睡眠時間的減少可能與現代生活節奏加快有關。”^[34] 此外，研究還發現，睡眠時間的減少與心臟病發作的風險增加有關。^[35]

研究人員還發現，在過去十年中，美國人的平均睡眠時間從20—30分鐘減少到6—9分鐘。^[36] 此外，研究還發現，睡眠時間的減少與心臟病發作的風險增加有關。^[37]

研究人員還發現，在過去十年中，美國人的平均睡眠時間從1200—1800分鐘減少到550—800分鐘。^[38]

研究人員還發現，在過去十年中，美國人的平均睡眠時間從40分鐘減少到34分鐘。這項研究是由Kelly DeVries領導的，她指出：“睡眠時間的減少可能與現代生活節奏加快有關。”^[39] 此外，研究還發現，睡眠時間的減少與心臟病發作的風險增加有關。^[40]

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35 Kritoboulos “ [46]

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[\[1\]](#) Vaughan, Philip the Bold.
[\[2\]](#) DeVries and Smith, Artillery, 16.
[\[3\]](#) DeVries and Smith, Artillery, 17–18.
[\[4\]](#) Brackenbury, Ancient, Part II, 30.
[\[5\]](#) Froissart, Chroniques, vol. 8, 1370–1377 (1888 ed.), 249.
[\[6\]](#) Froissart, Chroniques, vol. 8, 1370–1377 (1888 ed.), 249. Brackenbury, Ancient, Part II, 39; Froissart, Chroniques, vol. 1 (1835 edition), 33–34.
[\[7\]](#) Froissart, Chroniques, vol. 1 (1835 ed.), 716.
[\[8\]](#) Brackenbury, Ancient, Part II, 33.
[\[9\]](#) Froissart, Chroniques, vol. 8, 1370–1377 (1888 ed.), 249.
[\[10\]](#) Froissart, Chroniques, vol. 8, 1370–1377 (1888 ed.), 249.
[\[11\]](#) Froissart, Chroniques, vol. 8, 1370–1377 (1888 ed.), 249.
[\[12\]](#) Brackenbury, Ancient, Part II, 39; Froissart, Chroniques, vol. 1 (1835 ed.), 34.
[\[13\]](#) Froissart, Chroniques, vol. 2 (1835 ed.), 214.
[\[14\]](#) Froissart, Chroniques, vol. 2 (1835 ed.), 214. “53” Brackenbury, Ancient, Part II, 37.
[\[15\]](#) Froissart, Chroniques, vol. 2 (1835 ed.), 214.
[\[16\]](#) Schmidtchen, “Riesengeschütze,” pt. 1, 164–66.
[\[17\]](#) Gibson, Pieter Bruegel, 124–28.

- [18] Schmidtchen, "Riesengeschütze," pt. 2, 221–22.
- [19] Hale, Renaissance, 393.
- [20] Cunningham and Grell, Four, 119.
- [21] Cited in Rogers, " 'Military Revolutions' and 'Revolutions in Military Affairs,'" 22.
- [22] DeVries, "Facing," 41.
- [23] 砲臺・城塞の歴史 1500–2000 “1500–1000–1500–2000” Rogers, "Military Revolutions of the Hundred," 262. 砲臺・城塞の歴史 1500–2000 DeVries, "Use of Gunpowder," 4–5; and Smith, "Artillery," 157. 砲臺・城塞の歴史 Rogers, "Artillery." See also DeVries, "Facing" and Salamagne, "Attaque." 砲臺・城塞の歴史 Curry, "Guns," 182–83.
- [24] DeVries, "Facing," 41.
- [25] DeVries and Smith, Medieval Military, 142.
- [26] DeVries and Smith, Artillery, 25.
- [27] DeVries, "Use of Gunpowder," 8.
- [28] Duc d'Alençon, cited in DeVries, "A Woman," 9.
- [29] DeVries and Smith, Medieval Military, 159.
- [30] Paschalidou, "Walls," 172.
- [31] 砲臺・城塞の歴史 1500–2000 “砲臺・城塞の歴史” Philippides and Hanak, Siege, 390n112.
- [32] DeVries, "Technology," 285.
- [33] Philippides and Hanak, Siege, 390. Cf. the translation in DeVries, "Technology," 285.
- [34] 砲臺・城塞の歴史 1500–2000 Kritoboulos 1500–2000 38790 Philippides and Hanak, Siege, 416–17.
- [35] 砲臺・城塞の歴史 Doukas 1400–after 1462 砲臺・城塞の歴史 1100 Philippides and Hanak, Siege, 394.
- [36] Philippides and Hanak, Siege, 417–18.
- [37] Philippides and Hanak, Siege, 419. 砲臺・城塞の歴史 1200 Hanak, "Sultan." 砲臺・城塞の歴史 1100 Philippides and Hanak, Siege, 419.
- [38] Philippides and Hanak, Siege, 419n89.
- [39] Michael Kritoboulos (ca. 1410–ca. 1470), cited in and translated by Philippides and Hanak, Siege, 416.
- [40] Philippides and Hanak, Siege, 423.
- [41] Philippides and Hanak, Siege, 423.
- [42] This according to Doukas. Philippides and Hanak, Siege, 425.

- [43] Nestor-Iskander, cited in Philippides and Hanak, *Siege*, 419.
- [44] Bishop Samuel, cited in Philippides and Hanak, *Siege*, 477n10.
- [45] Eparkhos and Diplovatatzes, cited in Philippides and Hanak, *Siege*, 477n10.
- [46] Michael Kritoboulos, cited in DeVries, "Gunpowder Weapons," 357–58.
- [47] Kritoboulos, cited in Eparkhos and Diplovatatzes, cited in Philippides and Hanak, *Siege*, 483.
- [48] Eparkhos and Diplovatatzes, cited in Philippides and Hanak, *Siege*, 483.
- [49] 17 See Ágoston, "Ottoman," esp. 45–46; and Ágoston, *Guns*, 184ff.
- [50] Doukas, cited in DeVries, "Gunpowder Weapons," 358.
- [51] Barbaro, *Diary*, 67.
- [52] Howard, *War*, 35, cited in DeVries, "Gunpowder Weapons," 345.
- [53] Paschalidou, "Walls," 172–78, 174.
- [54] Gibbon, cited in DeVries, "Gunpowder Weapons," 343.
- [55] Gibbon, cited in DeVries, "Gunpowder Weapons," 343.
- [56] Ágoston, *Guns*.
- [57] Kritoboulos, cited in DeVries, "Gunpowder Weapons," 355.
- [58] Kritoboulos, cited in DeVries, "Gunpowder Weapons," 360.
- [59] Gibbon, cited in DeVries, "Gunpowder Weapons," 343.
- [60] See "The Siege of Suzhou, 1366" section in chapter 4.
- [61] See "The Siege of Suzhou, 1366" section in chapter 4. Cheng Dong, "Ming dai qian qi," 74; Wang Zhaochun, "Hong wu," 183; Wang Zhaochun, *Zhong guo gu dai bing qi*, 170–71.
- [62] McNeill, "Men," quote on 14.
- [63] Toy, *History*, 181.
- [64] Wu Yue chun qiu, cited in Xu, *Chinese City*, 45.
- [65] Koller, "Mittelalterliche," esp. 9–11.
- [66] Xu, *Chinese City*, 45.
- [67] Sit, *Chinese City*, 39.
- [68] Sawyer and Sawyer, *Ancient*, 125.
- [69] DeVries and Smith, *Medieval Military*, 189. 10.258 Kaufmann, Kauffman, and Jurga, *Medieval Fortress*, 35.
- [70] Kaufmann, Kauffman, and Jurga, *Medieval Fortress*, 35; DeVries and Smith, *Medieval Military*, 191.
- [71] DeVries and Smith, *Medieval Military*, 191.

[72] [ringforts](#) [Otzenhausen](#)
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[73] See Paschalidou, "Walls," 172–78.

[74] Paschalidou, "Walls," 172–78, 172.

[75] Tomlinson, Mycenae, cited in Tracy, "Introduction," 10.

[76] DeVries and Smith, *Medieval Military*, 269. See Planitz, *Deutsche Stadt*, 231–35.

[77] Planitz, *Deutsche Stadt*, 260.

[78] Kenyon, *Medieval Fortifications*, 186.

[79] For France, see Allmand, *Hundred*, 77; for England, see Kenyon, *Medieval Fortifications*, 183–84. For the German lands, see Planitz, *Deutsche Stadt*, 229–42.

[80] Kenyon, *Medieval Fortifications*, 187.

[81] Kenyon, *Medieval Fortifications*, 187.

[82] DeVries and Smith, *Medieval Military*, 248–49.

[83] DeVries and Smith, *Medieval Military*, 270. *My italics*.

[84] Kaufmann, Kauffman, and Jurga, *Medieval Fortress*, 36.

[85] Kiang, *Cities*, 19.

[86] Xu, *Chinese City*, 113.

[87] See Huang, "Defensive," 39–40.

[88] DeVries, "Facing," 48.

[89] Contamine, "L'artillerie."

[90] Cited in Contamine, "L'artillerie."

[91] 300 See Philippides and Hanak, *Siege*, 423.

[92] Kelly, *Gunpowder*, 78

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年代	长度 (cm)	口径 (cm)	长度、口径 比	年代	长度 (cm)	口径 (cm)	长度、口径 比
1332	35.3	10.5	3.4	1377	27.0	2.3	11.7
1352	43.4	3.0	14.5	1377	38.5	1.9	20.3
1368	45.0	2.0	22.5	1377	31.5	10.0	3.2
1368	21.2	1.5	14.1	1377	100.0	21.0	4.8
1368	40.0	2.0	20.0	1378	43.8	2.0	21.9
1368	74.0	7.0	10.6	1378	43.5	2.0	21.8
1372	43.0	2.0	21.5	1378	31.0	4.0	7.8
1372	44.2	2.2	20.1	1378	36.4	11.9	3.1
1372	37.0	13.4	2.8	1378	36.0	12.0	3.0
1372	36.5	11.0	3.3	1378	52.0	10.8	4.8
1372	37.0	12.2	3.0	1379	44.2	2.1	21.0
1375	63.0	11.0	5.7	1379	44.5	2.0	22.3
1375	61.0	11.0	5.5	1379	29.5	2.5	11.8
1377	43.5	2.0	21.8	1400	40.3	2.2	18.3
1377	44.0	2.0	22.0	1409	34.5	1.7	20.3
1377	43.0	2.0	21.5	1409	35.0	1.5	23.3
1377	32.3	2.1	15.4	1409	35.5	1.5	23.7
1377	44.0	2.0	22.0	1409	35.2	1.5	23.5
1377	43.7	2.3	19.0	1409	55.0	7.3	7.5
1377	42.7	2.3	18.6	1412	36.0	1.4	25.7
1377	44.0	3.3	13.3	1412	36.0	1.5	24.0
1377	44.0	2.2	20.5	1413	35.7	1.4	25.5
1377	42.0	2.1	20.0	1413	35.7	1.5	23.8
1377	31.0	2.0	15.5	1413	36.0	1.5	24.0
1377	44.0	2.1	21.0	1415	44.0	5.2	8.5
1377	31.2	2.0	15.6	1415	43.6	5.3	8.2
1377	42.0	2.2	19.1	1415	44.0	5.2	8.5
1377	36.0	1.9	18.9	1421	35.7	1.5	23.8

年代	长度 (cm)	口径 (cm)	长度、口径 比	年代	长度 (cm)	口径 (cm)	长度、口径 比
1421	35.8	1.5	23.9	1425	35.9	1.4	25.6
1421	36.0	1.7	21.2	1435	34.5	1.5	23.0
1421	35.0	1.5	23.3	1435	35.9	1.5	23.9
1425	36.0	1.5	24.0	1435	36.0	1.3	27.7
1425	35.8	1.4	25.6	1443	38.0	1.5	25.3
1425	35.8	1.7	21.1	1444	35.8	1.2	29.8
1425	35.9	1.4	25.6	平均值			17.3

图2 中国铁炮1332—1444

中国铁炮17—19世纪23—24世纪28世纪34—37世纪52世纪63—97世纪
 15世纪17.3世纪17—19世纪23—24世纪28世纪34—37世纪52世纪63—97世纪
 Wang Rong, “Yuan dai”; Yuan, “Shan dong”; LX, 107, 117; Hu, “Ming dai tie pao”;
 Liu Shanyi, “Shan dong”; Yin, “He zhang”; Chen Lie, “He bei”; Shi Wanlin, “Gan
 su”; Shi, “Zhen jiang”; Liu Hongcai, “Ding bian” “Late Medieval Divergence”

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[14] Shi and Li, “Nei,” 36.

[15] See Dang Shoushan, Wu wei, 111.

[16] DeVries and Smith, Artillery, 46.

[17] Smith, “All Manner,” 137.

[18] 明朝的軍事技術在當時是相當先進的，但到了清朝初期，由於火藥的品質下降，以及火器製造技術的停滯不前，使得明朝的火器在戰場上的表現不如清朝初期。——明朝的火器在戰場上的表現不如清朝初期，這是由於火藥的品質下降，以及火器製造技術的停滯不前。

[19] Lorge, Asian, 17.

[20] 阿爾森Allsen, “Circulation,” 286.

[21] See esp. quotes from He Rubin 何魯賓 and the MSL, Xiao zong shi lu (Hongzhi reign), cited in Li Yue, “Ming dai huo qi,” 16 and 31.

[22] Feng Zhenyu, “Lun Fo lang ji,” 59.

[23] 阿爾森“阿爾森……明朝的火器製造技術在當時是相當先進的，但到了清朝初期，由於火藥的品質下降，以及火器製造技術的停滯不前，使得明朝的火器在戰場上的表現不如清朝初期。”WZC, 111-12. 阿爾森WZC3, esp. 132.

[24] Ferguson, Civilization, 31-33.

[25] Cipolla, Guns, 117; Landes, “Why Europe,” 13, 19, 20; Duchesne, Uniqueness, 173-74; Kelly, Gunpowder, 99; Arnold, Renaissance, 25; Neiberg, Warfare, 39; Archer et al., World History, 204.

[26] 阿爾森Clunas, Empire, and Brook, Confusions. On Ming military dynamism, see Swope, Dragon’s Head; Swope, Military Collapse; Shi Kang (Swope), “Ming-Qing zhan zheng”; Li Yue, “Ming dai huo qi”; Di Tema, “1514-1683”; and Li, Da Ming.

[27] In Musée Condé, Chantilly, manuscript 1561, fol. 10v, cited in Contamine, War, 125.

[28] Cook, Hundred, 71.

[29] Tallett, War, 13.

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The Military Revolution [\[15\]](#) 16 17

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“[\[17\]](#) revolution” “[\[18\]](#) evolution” “[\[19\]](#) punctuated equilibrium”
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——·[\[20\]](#) Clifford Rogers1415161719Jeremy Black20Fernando Gonzalez de León“”1580159021Olaf van Nimwegen1600“”1760“”[\[22\]](#)[\[23\]](#)[\[24\]](#)

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1536

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“[\[40\]](#)”
“[\[41\]](#)”
artillery fortress

breastwork
“[\[42\]](#)”
camellos
“[\[43\]](#)”

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“[\[46\]](#)”
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[\[1\]](#) See Hall, Weapons, 2. Rogers, “Idea.”

[\[2\]](#) Smith, Inquiry (1869 ed.), 292.

[\[3\]](#) Smith, Inquiry (1869 ed.), 292.

[\[4\]](#) Smith, Inquiry (1869 ed.), 292.

[\[5\]](#) Marx, “Division.”

[\[6\]](#) Landers, Field and Forge; Bulliet et al., Earth, 628; Harari, Special, 1–52; Truxillo, Crusaders, 35–77; Thornton, Warfare, 61–64; McClellan and Dorn, Science, 192–95. “[\[40\]](#)”

“Parker, Cambridge, esp. 2–11 and 106–19. Max Boot, War, 19–105. Luc De Vos, “La bataille,” 145.

[7] DeVries, “Gunpowder Weaponry and the Rise,” 145. Anne Curry, “Guns.”

[8] Arnold, Renaissance, 18–19; McNeill, “Gunpowder Revolution,” 8.

[9] Lorge, Asian, 20–22; Lorge, “Development and Spread,” 819, 822–23.

[10] Lieberman, Strange Parallels, vols. 1 and 2. See Andrade, “Victor.” Cullen, “Reflections,” 20.

[11] Crone, Pre-industrial, 148.

[12] Zhang Wen, “Huo qi,” esp. 86–89.

[13] Hale, War, 248–51, cited in DeVries, “Gunpowder Weaponry and the Rise,”

[14] See esp. Hall, Weapons, esp. 1–8 and 201–35; cf. Stone, “Technology.”

[15] See esp. Parker, Military Revolution.

[16] Ayton and Price, Medieval, 17; Mortimer, “Introduction,” 3. Mortimer, “Spanish.”

[17] Hall, Weapons; Black, Military Revolution; Rogers, “Military Revolutions of the Hundred.” Parrott, “Had a Distinct.”

[18] Roberts, Military Revolution (1956 version).

[19] See Rogers, “Military Revolutions of the Hundred,” 243; and Rogers, “Artillery.” Cf. Salomagne, “Attaque,” and DeVries, “Facing.”

[20] See esp. Black, Military Revolution.

[21] De León, “Spanish,” 26.

[22] Van Nimwegen, Dutch Army, 17.

[23] Cook, Hundred; Börekçi, “Contribution”; Ágoston, “Military”; Eaton and Wagoner, “Warfare”; Stavros, “Military”; Kang, “Big Heads”; Andrade, Kang, and Cooper, “Korean.” Khan, Gunpowder, esp. 48–49.

[24] Andrade, Lost Colony; Sun Laichen, “Ming-Southeast Asian,” 31, 75.

[25] Marks, Tigers, 84–133.

[26] Cristovã Vieyra, “1534.” Ferguson, Letters, 103–43.

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[28] 荷蘭東印度公司 Ollé, Invención. 荷蘭東印度公司 Andrade “Company’s Chinese Pirates”; Blussé, “V.O.C.”

[29] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 160.

[30] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 157.

[31] See Newitt, History, 14–15.

[32] Correa, Three Voyages, 367, cited in Garrett, Defences, 1.

[33] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 164.

[34] 荷蘭東印度公司 1534 年 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 103–43, quote on 124–25.

[35] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 161.

[36] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 150.

[37] Cited in Parker, “Artillery Fortress,” 393–94.

[38] Cited in Parker, “Artillery Fortress,” 394.

[39] Duffy, Siege Warfare, 8–57; Parker, Military Revolution; Parker, “Artillery Fortress.”

[40] Parker, “Artillery Fortress.”

[41] Parker, “Artillery Fortress,” 416.

[42] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 145.

[43] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 146.

[44] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 150–51.

[45] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 144.

[46] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 149.

[47] 荷蘭東印度公司 1536 年 10 月 11 日 荷蘭東印度公司 荷蘭東印度公司 Ferguson, Letters, 158–66, quote on 150.

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[1] “” Yongjin Zhang, “Curious,” esp. 63–64; Wang and Pan, “Ming chao”; and Wilson, “Maritime,” 281n61. *Lost Colony* “” Andrade, *Lost Colony*, 337n23.

[2] Chang, Sino, 54–60; Gruzinski, Eagle, 96–100; Wang and Pan, “Ming chao.” Newitt, History; Hao, Macau, 11–12.

[3] Black, European, 173; Black, “Conclusion,” esp. 437–38.

[4] Kolb, “Excursions,” 454.

[5] See Peng, “Wo guo,” 66. 2012 10 15 http://www.szyuanzhumin.com/a/culture/local_focus/history/2012/1015/20073.html, 2013 3 5 Roderich Ptak “technology transfer” Ptak, “Wugongchuan.”

[6] Chang, Sino; Wills, “Relations”; Chang, “Malacca”; Ptak, “Macau”; Ptak, “Early Portuguese”; Pelliot, “Hoja”; Lévy, “L’arrivée”; and Ng, “Trade.”

[7] MS, juan 325, “” Pelliot, “Hoja.”

[8] MS, juan 325, “” Pelliot, “Hoja.”

[9] MS, “”

[10] Yan, Shu yu, 320. ——— Gu, “Tian xia,” 3831.

[11] MS, juan 325, “” “” Zhang Haipeng, Zhong Pu, 206; Gu, “Tian xia,” 3830–

32; Zhang Haipeng, Zhong Pu, 206–7, 206. Fukuda, “Relations,” 1.

[12] Barros De Barros, Da Asia, Decada Tercera, Parte Segunda, 14–17. See also Ferguson, Letters, 15.

[13] “Tian xia,” 3831.

[14] Gu, “Tian xia,” 3831.

[15] Carrington and Fang, Dictionary. Peng, “Wo guo,” 66–67.

[16] Wang and Pan, “Ming chao,” 142. Lin and Zou, Zhongguo Hucker, Dictionary. Chang, Sino, 54. http://www.szyuanzhumin.com/a/culture/local_focus/history/2012/1015/20073.html, 2013 3 5

[17] Wang and Pan, “Ming chao,” 142.

[18] Guangdong tong zhi (Wanli period), Chen, “Ming dai,” 90. Peng, “Ming kang,” 115.

[19] De Barros, Da Asia, Decada Tercera, Parte Segunda, 21–22.

[20] De Barros, Da Asia, Decada Tercera, Parte Segunda, 21–22.

[21] Gu, “Tian xia,” 3832, 3831. Wu Guifang, “Yi zu.”

[22] Yao, “Xi pao,” 16.

[23] Zhang Haipeng, Zhong Pu, 206–7. Cf. Jin Guoping, Xi li, 2; and Chen Botao “Wang Hong,” 205.

[24] Balfour “Hong Kong,” 172–73. De Barros, Da Asia, Decada Tercera, Parte Segunda, 22–23.

[25] Zhang Haipeng, Zhong Pu, 206–7.

[26] De Barros, Da Asia, Decada Tercera, Parte Segunda, 23.

[27] “1521 1522” Zhang Haipeng, Zhong Pu, 206–7. 1521 1522 1521

[28] Letter from Martim Afonso de Mello Coutinho to the King, Goa, 25 October 1523, in Costa, “Coroa,” appendix, 75–81, 76. Mello’s letter is also in Smith, Martim.

[29] MSL, Shi zong shi lu, juan 24, Jiajing 2, 3rd month (p. 693).

[30] Letter from Martim Afonso de Mello Coutinho to the King, Goa, 25 October 1523, in Costa, “Coroa,” appendix, 75–81, 76.

[31] Letter from Martim Afonso de Mello Coutinho to the King, Goa, 25 October 1523, in Costa, “Coroa,” appendix, 75–81, 76.

- [32] Barros, Da Asia, Decada Tercera, Parte Segunda, 285.
- [33] Barros, Da Asia, Decada Tercera, Parte Segunda, 286.
- [34] Barros, Da Asia, Decada Tercera, Parte Segunda, 286.
- [35] Letter from Martim Afonso de Mello Coutinho to the King, Goa, 25 October 1523, in Costa, "Coroa," appendix, 75-81, 78.
- [36] Barros, Da Asia, Decada Tercera, Parte Segunda, 286.
- [37] MSL, Shi zong shi lu, juan 24, Jiajing 2, 3rd month (p. 693).
- [38] Barros, Da Asia, Decada Tercera, Parte Segunda, 286.
- [39] Barros, Da Asia, Decada Tercera, Parte Segunda, 286. 葡·國·使·臣·書·呈·大·王·“葡·國·使·臣·書·呈·大·王·” Letter from Martim Afonso de Mello Coutinho to the King, Goa, 25 October 1523, in Costa, "Coroa," appendix, 75-81, 78.
- [40] MSL, Shi zong shi lu, juan 24, Jiajing 2, 3rd month (p. 693).
- [41] 葡·國·使·臣·書·呈·大·王·“葡·國·使·臣·書·呈·大·王·” From MS, juan 235, “葡·國·使·臣·書·呈·大·王·”
- [42] 鄭·若·曾·Zheng Ruozeng, Chou hai tu bian, 1257. 周·偉·強·Zhou Weiqiang, “Fo lang,” 95-125, 102.
- [43] Gu Yingxiang, “Jing xu zhai xi yin lu,” 102.
- [44] Yan, Shu yu, 321-22.
- [45] MSL, Shi zong shi lu, juan 154, Jiajing year 12, ninth
- [46] Letter from Martim Afonso de Mello Coutinho to the King of Portugal, Goa, 25 October 1523, in Costa, “Coroa,” 11-84, quote on 76. (Mello’s letter appears as an appendix to this article, on 75-81.) The letter is also contained in another edition: Smith, Martim.

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[1] Duchesne, Uniqueness, 173

[2] Fairbank and Goldman, China, 115.

[3] Arnold, Renaissance, 18-19.

[4] Kelly, Gunpowder, 99.

[5] Fan Chuannan, “Gong ma,” 102.

[6] Kelly, Gunpowder, 99.

[7] Cipolla, Guns, 117.

[8] Landes, “Why Europe,” 19.

[9] Peng, “Ming kang,” 114-15.

[10] 王弘，见《Wu and Li, “Lun Wang Hong.”

[11] MS, juan 235, Foreign Countries Part 6, section on “Fo lang ji.”

[12] MS, juan 235, Foreign Countries Part 6, section on “Fo lang ji.”

[13] 王弘，见《Wu and Li, “Lun Wang Hong.”

[14] 王弘，见《Yan, Shu yu, 322.

[15] MSL, Shi zong shi lu, juan 154, Jiajing year 12, ninth month (pp. 3494–95), translated in Wade, “Portuguese,” 295–96.

[16] See Wang Shilin, “5 ceng.”

[17] Peng, “Wo guo,” 66. 王弘，见《Peng, “Wang Hong yu Folangji” and Peng, “Ming kang.”

[18] 王弘，见《2012 年 10 月 15 日 王弘，见《http://www.szyuanzhumin.com/a/culture/local_focus/history/2012/1015/20073.html 王弘，见《2013 年 3 月 5 日 王弘，见《<http://baike.baidu.com/view/1452345.htm> 王弘，见《2013 年 3 月 5 日

[19] 王弘，见《WZC, 120–25; 王弘，见《WZC2, 198ff. Cf. Lin and Guo, “Ming Qing,” 165–78. 王弘，见《1518 王弘，见《Zhou, “Fo lang ji chong,” 105

[20] Lin Jun, 1452–1527. 王弘，见《

[21] 王弘，见《——王弘，见《

[22] Wang Yangming, “Shu Fo lang ji.”

[23] 王弘，见《

[24] 王弘，见《492 王弘，见《

[25] 王弘，见《757 王弘，见《755–763 王弘，见《

[26] 王弘，见《5 王弘，见《“王弘”王弘，见《

[27] 王弘，见《719–783 王弘，见《

[28] Wang Yangming, “Shu Fo lang ji.”

[29] Zhou, “Fo lang ji chong,” 112–14.

[30] 王弘，见《1517 王弘，见《60 王弘，见《Ng, “Trade,” 386. See also Zhou, “Fo lang ji chong,” 117. Zhou cites in turn Liao, “Zao qi,” 72. Xu Qingsong 王弘，见《Wei Sheng 王弘，见《1507 王弘，见《Zheng and Xu, “Fo lang ji.”

[31] 王弘，见《Zhou, “Fo lang ji chong.”

[32] 周1491-1562“[Folangji gong suo wei](#)”[Zhou](#), “Fo lang ji chong,” 109.

[33] [Zhou](#), “Fo lang ji chong,” 109.

[34] 周1475-1477

[35] Tang Long, “Folangji gong suo wei,” [Zhou](#), “Fo lang ji chong,” 112. [Zhou](#), “Fo lang ji chong,” 112.

[36] [Zhou](#), “Fo lang jichong,” 112. [Clunas and Wen](#), *Elegant Debts*, 116-18.

[37] 周1517-1513 [Braga, China Landfall and Smith](#), Projected.

[38] [Zhou](#), “Fo lang ji chong,” 97.

[39] Eaton and Wagoner, “Warfare,” 26.

[40] Yin and Yi, “Ming mo,” 504.

[41] See Li Yue, “Ming dai huo qi,” 62; Li Bin, “Ming Qing huo qi,” 154-55.

[42] See Di Cosmo, “Did Guns,” 131-32.

[43] Wade, “Portuguese,” 300.

[44] [Zhou](#), “Fo lang ji chong,” 97.

[45] [Zheng, Chou hai](#), juan 13 (1990 edition), 1257. [Zhou](#), “Fo lang ji chong,” 102. [Li Bin](#), “Ming Qing huo qi,” 155-56.

[46] Swope, “Crouching,” 20.

[47] See WZC, 127.

[48] Feng Zhenyu, “Lun fo lang ji,” 59.

[49] WZC, 129.

[50] WZC, 129.

[51] Weng Wanda, “Zhi zao huo qi shu,” in Weng Wanda, *Weng Wanda ji*, 378-79, cited in Feng Zhenyu “Lun Fo lang ji,” 59.

[52] Feng Zhenyu, “Lun Fo lang ji,” 59-60.

[53] Feng Zhenyu, “Lun Fo lang ji,” 60-61.

[54] [Zheng, Chou hai](#), juan 13, section on Folangji, 1990 edition, quote from 1264.

[55] Li Yue, “Ming dai huo qi,” 32.

[56] WZC3, 159ff. See also Li Yue, “Ming dai huo qi.”

[57] WZC, 126.

[58] 中國佛教通史Feng Zhenyu, “Lun fo lang ji.”中國佛教通史WZC, 126–34.

[59] 中國佛教通史Zhang, “Role.”

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1380年，[\[58\]](#) 1466年，33% 16年，[\[59\]](#)

618—907年，960—1279年，1368—1644年

“[\[60\]](#)”[\[61\]](#) Battle of Beverhoutsveld [\[62\]](#) Battle of Bulgnéville [\[63\]](#) coulevres [\[64\]](#)

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[1] in Zhuge Liang, *Zhuge liang ji*, juan 2, 43.

[2] Michael Roberts, cited in Eltis, *Military*, 8.

[3] See Hall, *Weapons*, 149.

[4] Parker, *Military Revolution*, 20.

[5] Parker, *Cambridge*, 391.

[6] 1594-12 “*Limits*,” 339. Koninklijke Huisarchief, The Hague, MS A22-1XE-79, Parker, “*Limits*,” 339. 1607

[7] Lipsius, *militia* Scott, “*Victory*.” 116-122

[8] 8. Landtsheer, “*Justus*,” 101-22; Dear, “*Mechanical*”; Parrot, *Business*, 97-99; Parker, “*Limits*.”

[9] Van Reydt, *Histoire*, 162. Parker, “*Limits*,”

[10] 1594-12 “*Limits*,” 339. Koninklijke Huisarchief, The Hague, MS A22-1XE-79, Parker, “*Limits*,” 339.

[11] De Equiluz, *Milicia*, 69. De León, “*Spanish*,” 25-42.

[12] Parker, “*Limits*,” 337.

[13] De León, “*Spanish*,” 28, De León Oman, *History*, 181.

[14] Ágoston, *Guns*, 93-94; Ágoston “*Firearms*,” 16-24; Böekç, “*Contribution*,” 407-38.

[15] See van Nimwegen, *Dutch*, 100-112; and Parker, “*Limits*.” But see also Puype, “*Victory*.”

[16] Arnold, “*War*,” 35.

[17] Parker, *Cambridge*, 3.

[18] Parker, “*Limits*,” 140; Stavros, “*Military*.”

[19] Ágoston, *Guns*, 93-94; Ágoston “*Firearms*,” 16-24; Böekç, “*Contribution*,” 407-38.

[20] Lau and Ames, *Sun Bin*, 100

[45] MSL, Tai zu shi lu, Hongwu 11, month 3, juan 189 (p. 2860). 明史紀事本末
Wade,Southeast, entry 2876, accessed 26 October 2012.

[46] WZC, 109-10; Sun Laichen, "Military," 500.

[47] MSL, Tai zong shi lu, juan 152, Yongle 12, sixth month (p. 1764).

[48] WZC, 110.

[49] MSL, Tai zong shi lu, juan 262, Yongle 21, month 8, bingyin day (22 September 1423) (p.2396).

[50] WZC, 110.

[51] Parker, Military Revolution, 20.

[52] Prestwich, "Training," 372.

[53] Rogers, Soldiers' Lives, 68-69.

[54] Morillo, "Age," 52.

[55] 明史紀事本末, Ancient, Part II, 21. 明史紀事本末

[56] DeVries and Smith, Medieval Military, 144.

[57] Ayton and Preston, Battle, 154-55.

[58] WZC, 103 and 106.

[59] Anonymous, "Storie pistoresi," 223.

[60] Froissart, Chroniques, vol. 10 of 1870 Lettenhove ed., 31. 明史紀事本末
明史紀事本末 DeVries, "Forgotten Battle," 300.

[61] DeVries, "Forgotten Battle," 303.

[62] Enguerrand de Monstrelet, Chronique, cited in DeVries and Smith, Artillery, 105.

[63] Parker, Cambridge, 3.

[64] Arnold, "War," 36-37.

[65] Arnold, "War," 37.

[66] Cook, Hundred, 42ff.

[67] Ágoston, Guns, 93-94; Ágoston, "Firearms," 16-24; Böekç, "Contribution," 407-38.

[68] 明史紀事本末, 1447:11:15 cited in Kang, "Big Heads," 42-43.

[69] Lieberman, "Protected."

[70] Parker, Cambridge, 391.

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1575年，在纽波特战役（Battle of Newport）中，
 印第安人击败了荷兰人。^[66] 1584年，
 荷兰人再次在纽波特战役中击败了印第安人。^[67]

1600年，在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[68] 1636年，
 荷兰人再次在纽波特战役中击败了印第安人。^[69]
 1660年，在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[70] 1670年，
 在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[71] 1680年，
 在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[72] 1692年，
 在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[73]

1692年

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1692年，在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[70] 1692年，
 在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[71] 1692年，
 在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[72] 1692年，
 在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[73]

1692年，在纽波特战役（Battle of Nieuwport）中，
 印第安人再次击败了荷兰人。^[74]

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Hyeok Hweon Kang——[\[78\]](#)
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[14] Brown, "Impact," 239. 17 17 Keith, "Logistics," esp. 90–91.

[15] Stavros, "Military," 250–51.

[16] Parker, "Artillery Fortress," 414. See also Parker, *Military Revolution*, 140–41, *italics original*.

[17] Parker, "Limits," 336–37.

[18] Parker, *Military Revolution*, 140–41; Stavros, "Military," 248–52; Brown, "Impact," 239; Perrin, *Giving*, 17–20; Haskew et al., *Fighting*, 54–62, 94, and 189.

[19] Ōta, Elisonas, and Lamers, *Chronicle*, 42. Jeroen Lamers " " Lamers, *Japonius*. Conlan, *Weapons*, 170.

[20] Ōta, Elisonas, and Lamers, *Chronicle*, 34, 42, 222–27; Lamers, *Japonius*.

[21] Conlan, *Weapons*, 170.

[22] So, *Japanese Piracy*, 148. Petrucci, "Pirates," 63. Cf Murai, "Reconsideration," 21–22.

[23] So, *Japanese Piracy*, 149.

[24] Nakajima, "16 shi ji," 35–38.

[25] Shapinsky, "Polyvocal."

[26] Fan and Quan, *Ming dai*, 159–60. Nakajima " " Nakajima, "16 shi ji," 37.

[27] Murai, "Reconsideration," 23.

[28] Nakajima, "16 shi ji," 34.

[29] Zheng, *Chou hai*, section on " " (2007 edition), 909. See also SCC5 pt. 7, 431.

[30] Zheng, *Chou hai*, section on " " (2007 edition), 910. See also SCC5 pt. 7, 431.

[31] Nakajima, "16 shi ji," 43.

[32] So, *Japanese Piracy*, 149. Kwan-wai 245 2568 Grand Secretary Hsü Chieh Commander in Chief Yang I

[33] Fan and Quan, *Ming dai*, 160.

[34] *Da Ming hui dian*, juan 193, fol. 3, 2620.

[35] 1487–1566 " " 1521–1567 " " Nakajima, "16 shi ji," 34. Yan Su'e, "Guan yu Ming dai." Yin and Yi, "Ming mo," 505ff.; Nan Bingwen, "Zhong guo," 64ff.; and WZC, 134–37.

[36] Qi Jiguang, *Lian bing*, 2001 242

[37] Fan and Quan, *Ming dai*, 259–60.

- [38] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 56.
- [39] 戚繼光《紀效新書》卷二，戚繼光，連兵，「Za ji, juan 2,」2001年，241。
- [40] Qi Jiguang, Lian bing, «Za ji, juan 2,」2001年，242。
- [41] 黃，1587，168-69; Archer et al., *World History*, 198; Turnbull, *Pirate*, 52; Whiting, *Imperial*, 449.
- [42] 戚繼光《紀效新書》卷三，WZC3, 202-4.
- [43] Qi Jiguang, *Ji xiao xin shu*, 18 juan version, juan 2 (p. 38, 1999 edition).
- [44] Qi Jiguang, *Ji xiao xin shu*, 18 juan version, toward the end of juan 8 (p. 94, 1999 edition).
- [45] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 136. 樊宗聖Fan Zhongyi, «Ji xiao xin shu»; and Werhahn-Mees, «Neue,» 19-20.
- [46] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 152-53.
- [47] Clausewitz, *On War*, esp. 119-21. 克勞塞維茨Sally Paine 2001年，119-21。
- [48] Clausewitz, *On War* 122.
- [49] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 124-26.
- [50] Charles Oman, cited in Kelly, *Gunpowder*, 71.
- [51] Smith, «Meaning,» esp. 285ff.
- [52] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 59.
- [53] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 59. Europeans, too, measured out musket shots in advance. See, e.g., WZC3, 137.
- [54] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 135.
- [55] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 135.
- [56] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 135.
- [57] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 135.
- [58] 哈斯基Haskew et al., *Fighting*, 44.
- [59] Huang, 1587, 172, 171.
- [60] Gontier, «Qi,» chap. 1, sec. 3.3.
- [61] Qi Jiguang, Lian bing, *Za ji juan 6*, 2001年，325ff. 王，「Qi Jiguang,» 147.
- [62] See Hall, *Weapons*, 178-79.
- [63] See, e.g., Wang, «Qi Jiguang,» 147, 148.
- [64] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 135.
- [65] Qi Jiguang, *Ji xiao xin shu: shi si juan ben* (2001 edition), 57.

[66] 中国通志 Qi Jiguang, Lian bing, esp. juan 1, “明” 中国通志 中国通志 “明” pp. 240–43 2001 中国通志 中国通志 Zhou, “Ming dai zhan.”

[67] Qi Jiguang, Ji xiao xin shu: shi si juan ben (2001 edition), 49.

[68] Bi, Jun qi, fol. 1 (346).

[69] Bi, Jun qi, fol. 1 (346).

[70] 中国通志 WZC3, 108–13; and Zhu Chang, “Gu Chao Xian.”

[71] WZC3, 109.

[72] Wu Zhao, “16 zhi 17 shi ji Ri ben,” 13.

[73] Annals of King Sejong, juan 118 29:11: [1447/11/15]), cited in and translated by Kang, Big Heads,” 42–43.

[74] Swope, Dragon’s Head.

[75] Yu Songnyong, cited in Palais, Confucian, 519.

[76] 1595 “” Kang, “Big Heads,” 17. “” “” 1593 1536–1606 “” Song, Jing lue, juan 6. Kang, “Big Heads,” 17, “”

[77] Yu Hyongwon, Palais, Confucian, 519.

[78] Kang, “Big Heads,” 18.

[79] Kang, “Big Heads,” 18.

[80] Cited in Kang, “Big Heads,” 45.

[81] Kang, “Big Heads,” 45.

[82] Kang, “Big Heads,” 96.

[83] Kang, “Big Heads,” 72.

[84] Cited in Kang, “Big Heads,” 64.

[85] WZC3, 159; Li Yue, “Ming dai huo qi,” 70; Feng Zhenyu, “Lun.”

[86] “” Perrin, Giving. Totman, Review, and Lorge, Asian, 62–64.

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이러한 변화는 16세기 말에 이르러서야 본격적으로 나타나기 시작했다. 이 시기에 유럽에서는 arquebuse(아케부스)와 musket(머스킷)과 같은 새로운 무기들이 개발되었다. 이러한 무기들은 기존의 화포에 비해 훨씬 작고 가벼웠으며, 또한 더 쉽게 조종할 수 있었다. 이러한 변화는 유럽의 군사력에 혁명을 일으켰고, 결국에는 아시아의 군사력에도 영향을 미쳤다.

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[1] Parker, "Limits," 331-32.

[2] Parker, "Artillery Fortress."

[3] Parker, "Limits," 331-32.

[4] Hanson, Carnage, 5.

[5] MS, juan 325, section on “Holland” 荷蘭 “Lie zhuan 213,” Wai guo 6. 荷蘭國
http://zh.wikisource.org/wiki/%E6%98%8E%E5%8F%B2/%E5%8D%B7325, 2014
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[6] Cited in Andrade, How Taiwan, 173.

[7] Cited in Andrade, How Taiwan, 173.

[8] 荷蘭國 *Lost Colony*

[9] Blussé et al., Dagregisters, vol. 4, E: 627.

[10] See Andrade, Lost Colony, 316–21.

[11] 荷蘭國·von Wallhausen Kriegskunst 1580-1627
—— Moscow
Printing House Thomas, “Slavonic Book,” 486–87. ——
Simmons, “Printing,” 48.

[12] Mancall, Russia, esp. 1–65.

[13] Andrade, Kang, and Cooper, “Korean”; Kang, “Big Heads.”

[14] Sin Yu 辛裕 trans. Park Taegeun 朴泰根 Kugyok Pukchong ilgi.

[15] Hall, Weapons, 134–56. 荷蘭國

[16] Kang, “Big Heads,” 58–59.

[17] Kang, “Big Heads,” 101–4.

[18] Cited in Kang, “Big Heads,” 88.

[19] See De longh, Krijgswezen.

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[3] 荷蘭人對中國火器之認識“Did Guns,” 146.

[4] 鄭成功“Fa gong kao.”

[5] Ming shi, juan 325, section on “Holland” 荷蘭 “Lie zhuan 213,” 荷蘭 http://zh.wikisource.org/wiki/%E6%98%8E%E5%8F%B2/%E5%8D%B7325, 2014年5月30日

[6] Huang Yi-long, “Ming Qing du te,” 121. 黃一龍 Hucker, Dictionary, 544.

[7] 黃一龍 Huang Yi-long, “Ou zhou chen chuan,” 603.

[8] See Andrade, Lost Colony, 244.

[9] Shi Kang, “Ming-Qing,” 145.

[10] Huang Yi-long, “Ming Qing zhi ji,” 770–72.

[11] Sun Yuanhua, 1626, 孫元華 Huang Yi-long, “Sun Yuanhua,” 234.

[12] See Hart, Imagined.

[13] Huang Yi-long, “Sun Yuanhua,” 235.

[14] Wakeman, Great Enterprise, 59–62; Lorge, War, 143.

[15] MSL, 李月 Li Yue, “Ming dai huo qi,” 70.

[16] Sun Yuanhua, 孫元華 Huang Yi-long, “Sun Yuanhua,” 235. 孫元華 1608 年 1608 年 Huff Intellectual 22–47 72 114

[17] 董和黃 Dong and Huang, “Chong zhen,” 68.

[18] 董和黃 Dong and Huang, “Chong zhen,” 68.

[19] Huang Yi-long, “Ming Qing zhi ji.”

[20] Dong and Huang, “Chong zhen,” 67–68.

[21] 鄭成功 Chongzhen 3/5, 黃一龍 Huang Yi-long, “Sun Yuanhua,” 239.

[22] 鄭成功 Chongzhen 3/5, 黃一龍 Huang Yi-long, “Sun Yuanhua,” 239.

[23] 黃一龍 Huang Yi-long, “Sun Yuanhua,” 257.

[24] 黃一龍 Huang Yi-long, “Wu qiao”; and Agnew, “Migrants.”

[25] Cooper, Rodrigues, 350.

[26] Agnew, “Migrants,” 535.

[27] Huang Yi-long, “Sun Yuanhua,” 255.

[28] Xie Lihong, “Hong yi,” 105. 謝立宏 Di Cosmo, “Did Guns.”

[29] 謝立宏 Xie Lihong, “Hong yi,” 107. 謝立宏 Liu Hongliang, “Hong yi.”

[30] Huang Yi-long, “Ming Qing du te,” 83.

[31] Huang Yi-long, “Ming Qing du te,” 73.

- [32] Boxer, "Portuguese."
- [33] Huang Yi-long, "Sun Yuanhua," 258.
- [34] Mundy, *Travels*, vol. 3, pt. 1, 203–4.
- [35] 中國歷代地理志 1646 年 1646 年 "Mei guo Ha fo, vols. 19 and 20. 1646 年 1646 年"juan no. 8, fols. 22–22v. 1646 年 1646 年
- [36] "中國歷代地理志" 1646 年 Su, Taiwan, 60.
- [37] 中國歷代地理志 Rodger, "Development"; Padfield, *Guns*, 51–56; Parker, "Dreadnought."
- [38] Andrade, *Lost Colony*, 28.
- [39] *Ming shi lu Min hai guan xi shi liao*, 154.
- [40] Shapinsky, "Polyvocal."
- [41] *Zheng shi shi liao chu bian*, 1.
- [42] 中國歷代地理志 Chen Bisheng, "Ming dai," 88.
- [43] 中國歷代地理志 1601–1653 年 1633 年 7 月 13 日 *Battle between Dutch Ships and Chinese Junks, 13 July 1633* 1650 年 1650 年 <http://www.nationaltrustimages.org.uk/image/999626>, 2015 年 5 月 27 日
- [44] Letter from Governor Hans Putmans to Governor-General Hendrik Brouwer, 30 September 1633, Dutch National Archive, The Hague, VOC Collection, VOC 1113: 776–787, fols. 777v–778.
- [45] 中國歷代地理志 Andrade, *Lost Colony*, 40. 中國歷代地理志 "more than our own yachts" 中國歷代地理志 "yachts" 中國歷代地理志 "warships" 中國歷代地理志 "yachts" 中國歷代地理志 17 年 "yachts" 中國歷代地理志 "yacht" 中國歷代地理志 Andrade, *Lost Colony*, 134 and 362–63nn27, 35.
- [46] See Puype, "Zeventiende," 68.
- [47] 中國歷代地理志 Kelly, *Gunpowder*, 100.
- [48] Rodger, "Development."
- [49] Parker, *Military Revolution*, 94–96. Cf. Rodger, "Development"; Guilmartin, *Galleons*, 161–63.
- [50] Letter from Governor Hans Putmans to Governor-General Hendrik Brouwer, 30 September 1633, Dutch National Archive, The Hague, VOC Collection, VOC 1113: 776–787, fols. 777v–778.
- [51] 中國歷代地理志 Andrade, *Lost Colony*, 41–44.
- [52] 中國歷代地理志 Andrade, *Lost Colony*, 48.
- [53] 中國歷代地理志 Andrade, *Lost Colony*, 50.
- [54] 中國歷代地理志 Andrade, *Lost Colony*, 50.
- [55] Andrade, *Lost Colony*, 51–53.
- [56] Dagregister gehouden bij den schipper Andries Pietersz, in the yacht 'Sgravenlande, 30 April 1661 to 5 July 1661, Dutch National Archive, The Hague,

VOC Collection, VOC 1237: 41-56, fol. 41v.

[57] 陈 斌, “Zheng Chenggong,” 11. Cf. Zhang Zongqia, “Zheng Chenggong,” 31.

[58] Andrade, “Was the European,” esp. 29-31.

[59] Dagregister gehouden bij den schipper Andries Pietersz, in the yacht ‘Sgravenlande, 30 April 1661 to 5 July 1661, Dutch National Archive, The Hague, VOC Collection, VOC 1237: 41-56, fols 41v-42v.

[60] Andrade, “Was the European,” 36.

[61] Wills, Pepper, 73 (Wills’s translation).

[62] Riccio, “Hechos,” 618, cited in Andrade, “Was the European,” 37.

[63] Andrade, “Was the European,” 37.

[64] Yu Yonghe, “Pi hai,” 64.

[65] Zheng Dayu, Jing guo, “Wu bei kao” 卷 8, fol. 22.

[66] Peter Mundy 1637 “Mundy, Travels, vol. 3, pt. 1, 203.”

[67] Andrade, “Was the European,” 25-26.

[68] Dagregister gehouden bij den commandeur Cauw beginnende 5 Julij 1661 en eindigende 3 Februarij 1662, Dutch National Archive, The Hague, VOC Collection, VOC 1240:1-213, 1-2.

[69] Andrade, “Was the European.”

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[\[1\]](#) Richard, “Quelques idées”; DeVries, “Facing”; Contamine, War, 205; Mallett, “Siegecraft.”

[\[2\]](#) De León, “Spanish,” 40. Parker, Military Revolution, esp. 1–44 and 121–27; Parker, “Artillery Fortress”; Arnold, “War”; Arnold, “Fortifications.”

[\[3\]](#) Parker, “Artillery Fortress”; Arnold, “War,” 31.

[\[4\]](#) Black, “Western Encounter,” 23.

[\[5\]](#) Sun, Xi fa shen ji. Lin and Deng, “Ming mo.” Zheng Cheng, “Shou yu”

[6] Sun Yuanhua, “Chong tai tu shuo,” in *Xi fa shen ji*, 鄭成, “Shou yu,” 133.

[7] 鄭成·軍事 collapse, Swope, *Military Collapse*, 48.

[8] Han Lin *Shou yu quan shu* 鄭成 ca. 1638, cited in Zheng Cheng, “Shou yu,” 139.

[9] Zheng Cheng, “Shou yu,” 141.

[10] “Biography of Ma Weicheng,” *Xiong County Gazetteer* 鄭成 (Shunzhi Period, 1644–1661) 鄭成 Zheng Cheng, “Shou yu,” 142.

[11] De Lucca, *Jesuits*, 175–79.

[12] Von Bell, *Huo gong*.

[13] Von Bell, *Huo gong*, 鄭成 Zheng Cheng, “Shou yu,” 142.

[14] 鄭成 Zheng Cheng, “Shou yu,” 142.

[15] 鄭成 Zheng Cheng, “Shou yu,” 142.

[16] “Biography of Ma Weicheng,” *Xiong County Gazetteer* 鄭成 (Shunzhi Period, 1644–1661) 鄭成 Zheng Cheng, “Shou yu,” 142.

[17] 鄭成 Zheng Cheng, “Shou yu,” 142.

[18] “Biography of Ma Weicheng,” 鄭成 Zheng Cheng, “Shou yu,” 142.

[19] Zheng Cheng, “Shou yu,” 142–44.

[20] Zheng Cheng, “Shou yu,” 144–45.

[21] Zheng Cheng, “Shou yu,” 145.

[22] See Zheng Cheng, “Shou yu,” 144.

[23] Zheng Cheng, “Shou yu,” 147–48.

[24] 鄭成 Zheng Cheng, “Shou yu,” 142. 1633–1707 鄭成 Zheng Cheng, “Shou yu,” 142. “Mémoire pour servir d’instruction dans la conduite des sieges” 鄭成 1669 鄭成 1740 鄭成 Zheng Cheng, “Shou yu,” 142.

[25] 鄭成 Zheng Cheng, “Shou yu,” 142. Andrade, *Lost Colony*, and Andrade, “Artillery Fortress.”

[26] Koxinga to Coyet, 2 May 1661, in Blussé et al., *Dagregisters*, vol. 4, D: 528–29.

[27] Koxinga to Coyet, 10 May 1661 (Yongli 15, 4th month, 12th day), Blussé et al., *Dagregisters*, vol. 4, D: 528–29.

[28] Coyet to Koxinga, 10 May 1661, in Blussé et al., *Dagregisters*, vol. 4, D: 528–29.

[29] Coyet, *Verwaerloosde*, 122.

[30] 鄭成 Zheng Cheng, *Neglected*, 59–60. 鄭成 Zheng Cheng, *Verwaerloosde*, 121–23.

[31] Andrade, “Did Zheng.”

[32] Coyet to Batavia, 25 January 1662, in Blussé et al., Dagregisters, vol. 4, E: 728–32, esp. fols.728–29, quote at 734.

[33] 俄國使臣與荷蘭使臣會見之情形“俄使與荷蘭使臣會見之情形”1803年3月30日俄使與荷蘭使臣會見之情形E Ertai, “Lang Tan.” The report is at 3883–84, 頁2883. 俄使與荷蘭使臣會見之情形“俄使與荷蘭使臣會見之情形”

[34] E Ertai, “Lang Tan,” 3883–84.

[35] Mancall, Russia, 118. 俄使與荷蘭使臣會見之情形Kessler, K’ang-hsi.

[36] See Perdue, “Military.”

[37] 俄使與荷蘭使臣會見之情形Mancall, Russia, 132.

[38] E Ertai, “Lang Tan,” 3884.

[39] Müller, Sammlung, vol. 5, 417; “Report from Voevoda of Nerchinsk, Ivan Vlasov, to Prince Konstantin Shcherbatov,” after 20 June 1685, in Dmytryshyn, Crownhart-Vaughan, and Vaughan, Russia’s Conquest, vol. 1, 469–70, 469.

[40] QSL, Sheng zu shi lu (Kangxi reign), juan 121. E Ertai, “Lang Tan,” 3884.

[41] E Ertai, “Lang Tan,” 3885.

[42] E Ertai, “Lang Tan,” 3885.

[43] Witsen, Noord, 860.

[44] Müller, Sammlung, vol. 5, 416.

[45] “Report from the Voevoda of Nerchinsk, Ivan Vlasov, to the Voevoda of Eniseisk, Prince Konstantin Shcherbatov,” after 26 August 1685, in Dmytryshyn, Crownhart-Vaughan, and Vaughan, Russia’s Conquest, vol. 1, 471–75, 472. 俄使與荷蘭使臣會見之情形Ivanov, “Conflicting,” 353.

[46] Müller, Sammlung, vol. 5, 418–19.

[47] E Ertai, “Lang Tan,” 3885.

[48] Müller, Sammlung, vol. 5, 418–19.

[49] QSL, Sheng zu shi lu (Kangxi reign), juan 121.

[50] Müller, Sammlung, vol. 5, 418–19.

[51] “Report from the Voevoda of Nerchinsk, Ivan Vlasov, to the Voevoda of Eniseisk, Prince Konstantin Shcherbatov,” after 26 August 1685, in Dmytryshyn, Crownhart-Vaughan, and Vaughan, Russia’s Conquest, vol. 1, 471–75, 475.

[52] See V. F., “Bejton,” 47.

[53] Golder, Russian Expansion, 61.

[54] Müller, Sammlung, vol. 5, 423.

[55] Witsen, Noord, 861; Müller, Sammlung, vol. 5, 423.

[56] 俄使與荷蘭使臣會見之情形“俄使與荷蘭使臣會見之情形”Anonymous, Ping ding, quote at juan 3, fols.1v–2r.

[57] Witsen, Noord, 769.

[58] Anonymous, Ping ding, quote at juan 3, fols. 1v–2r.

[59] Müller, Sammlung, vol. 5, 423.

[60] Ravenstein, Russians, 46; Müller Müller, Sammlung, vol. 5, 423.

[61] Paul, “Military Revolution,” 30.

[62] Paul, “Military Revolution,” esp. 35–36.

[63] Keuning, “Nicolaas” and Witsen’s own “Voor-Reden aen den Lezer,” in Witsen, Noord, unpaginated, 16 pages at the beginning of vol. 1.

[64] “rondeelen”

[65] V. F., “Bejton,” 48.

[66] Anonymous, Ping ding, juan 3, fol. 1r. Cf. Witsen, Noord, 861.

[67] Witsen, Noord, 862.

[68] Witsen, Noord, 862. See also “Report to the Tsars Ivan Alekseevich and Petr Alekseevich from the Boiar Fedor Golovin,” 1687, in Dmytryshyn, Crownhart-Vaughan, and Vaughan, Russia’s Conquest, 482–83.

[69] E Ertai, “Lang Tan,” 3886.

[70] Witsen, Noord, 862.

[71] Semenov, Conquest, 122; Chen, Sino-Russian, 82; Witsen, Noord, 861; and Müller, Sammlung, vol. 5, 426–27. 1686 E Ertai, “Lang Tan,” 3886. 7 17

[72] Black, War, 72.

[73] Kangxi 25, 6th month, 4th day.

[74] E Ertai, “Lang Tan,” 3886.

[75] “Otpiski iz Udinskogo ostrozhka Andreia Iakovleva i Emel’iana Panikadil’nikova k Selengskomu prikaznomu cheloveka, s soobshcheniiem izvestiia poluchennikh im ot raznykh lits ob osade Kitait sami Albazina i ob ubienii v vremia osada voevody Aleksei Tolbuzina,” in Russia Arkheograficheskaiia kommissiia, Akty, 264.

[76] 91 —— 9 “Müller, Sammlung, vol. 5, 429. 7 E Ertai, “Lang Tan,” 3886. Witsen, Noord, 861–62.

[77] Müller, Sammlung, vol. 5, 429.

[78] Witsen, Noord, 861–62.

[108] Balthasar Bort, “Daghregister gehouden in de oorlogs vloot bescheijden onder de vlagge van den heer admirael Balthasar Bort, op de cust van China, zedert 27en October anno 1663 tot 3en December daeraen volgende,” Dutch National Archive, The Hague, VOC Collection, VOC 1244: 2546–2624, fol. 2614.

[109] 黃一龍Huang Yi-long, “Hong yi da pao yu Ming Qing”; and Zheng Cheng, “Shou yu,” 147.

[110] 安東Andrade, “Artillery Fortress.”

[111] Sun Zi, Art of War, “Offensive Strategy,” Juan 1.

[112] Deng Kongzhao, “Lun Zheng,” 32.

[113] 安東Andrade, “Artillery Fortress.”

[114] 威爾斯Wills, Pepper, 46.

[115] Perdue, “Military”; 戴英雲Yingcong Dai, “Yingyun.”

[116] Perdue, China Marches.

□□□

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1900年以前の日本は、1760年から1830年
の間、1766—1770年、1788—1789年、
1786—1787年、1795—1804年、
[8] 1786—1787年、1795—1804年、
[9] “.....” [9]

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[10] 19 1760 1839

1836 [11] [12] [13] [14]

[15] [16] [17] 1848 [18]

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17 18 [\[24\]](#)

“[\[25\]](#) 17 [\[26\]](#) [\[27\]](#)

William Hutcheon Hall “[\[28\]](#)

“[\[29\]](#) [\[30\]](#) [\[31\]](#)

「……」[32] 何れも
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的。[53] 在 1841 年，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。[54]

英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。

英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益——[55] 1841 年，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。[56] 英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。[57]

1839 年 11 月 16 日，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。13 日，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。“HMS Volage”[58] 英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。

1841 年 1 月，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。[59] 英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。“Algerine”[60] 10 月 8 日，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。“Conway”[61] 28 日 26 日，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。“Herald”[62] 28 日 26 日，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。12 月 5.44 日，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。24 日 10.88 日，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。[61] 英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。[62] 英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。

英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。1842 年 3 月，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。1841 年 10 月，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。1791—1853 年，英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。

英国政府决定在印度洋建立一个海军基地，以保护其在该地区的贸易利益。“

“[63] 1812年，美国与英国签订了《1812年条约》，该条约规定，美国将放弃对加拿大的领土要求，并承认英国对加拿大的主权。这一条约的签订，标志着美国在加拿大问题上的立场发生了重大转变，从之前的领土要求转变为承认英国的领土主权。这一转变，为美国与英国之间的和平关系奠定了基础，也为美国在加拿大问题上的政策提供了法律依据。这一政策，一直延续至今，成为美国在加拿大问题上的基本立场。”[64]

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在《[\[66\]](#)》中，作者指出：“……”[\[67\]](#)
 “……”[\[68\]](#)
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[illegible][illegible]

“1741年，‘
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1661年1668年[76]

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1814年1月1日—1828年12月31日

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wang-tong fort [96] [97] [98]

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“[\[1\]](#)”[\[99\]](#)

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19

[1] Sarah Paine, personal communication, June 2014; Garrett, “Weapons”; Lovell, Opium; Fay, Opium; Elleman, Modern, 13-34; Liu Hongliang, “Di yi ci”; Liu and Sun, “Ya pian”; Zhang and Liu, Ya pian; Liu Hongliang, Zhong Ying; Fan Chuannan, “Gong ma”; Richard Smith, “Reform.”

[2] Zhang and Liu, Ya pian, 2.

[3] Lorge, Chinese Martial, 212.

[4] Lorge, Asian, 17.

[5] Sarkar, “Technological.”

[6] Richard Smith, “Chinese Military.”

[7] Zhong guo li dai.

[8] Naquin, Millenarian.

[9] Waley-Cohen, Culture, 23.

[10] Wakeman, Great Enterprise, 1125-26; Perdue, China Marches, 526-27.

[11] Anonymous, “Military Skill,” 165-66.

[12] Anonymous, “Military Skill,” 167.

[13] Anonymous, “Military Skill,” 176.

[14] Anonymous, “Military Skill,” 176.

[15] Anonymous, “Military Skill,” 168-69.

[16] Anonymous, “Military Skill,” 172.

[17] Anonymous, “Military Skill,” 172.

[18] Dickens, Works, 110-13.

- [19] Anonymous, "Military Skill," 169.
- [20] Anonymous, "Military Skill," 169.
- [21] Anonymous, "Military Skill," 177.
- [22] Zhang and Liu, *Ya pian*, 187.
- [23] Liu Hongliang, *Zhong Ying*, 8.
- [24] Liu and Sun, "Ya pian," esp. 565–66.
- [25] Zhang and Liu, *Ya pian*, 1.
- [26] Richard Smith, "Chinese Military," 139–40.
- [27] See Saidel, "Matchlocks"; and Nourbakhsh, "Iran's," 553–54.
- [28] Bernard and Hall, *Narrative*, vol. 1, 265.
- [29] Bernard and Hall, *Narrative*, vol. 1, 357.
- [30] Bernard and Hall, *Narrative*, vol. 1, 357.
- [31] Bernard and Hall, *Narrative*, vol. 1, 357.
- [32] Fan Chuannan, "Gong ma," esp. 102–3.
- [33] Richard Smith, "Chinese Military," 139–40.
- [34] See Fan Chuannan, "Gong ma," 105.
- [35] Fan Chuannan, "Gong ma," esp. 102–3.
- [36] Fan Chuannan, "Gong ma," 105.
- [37] Qianlong Emperor, cited in Fan Chuannan, "Gong ma," 105.
- [38] 彭亨王國與馬六甲王國Perrin, Giving. 彭亨王國與馬六甲王國Perrin 和 Totman, "Review," and Lorge, *Asian*, 62–64.
- [39] Fan Chuannan, "Gong ma," 105.
- [40] Richard Smith, "Chinese Military," 140.
- [41] Upton, *Armies*, 20.
- [42] Upton, *Armies*, 20.
- [43] Upton, *Armies*, 21.
- [44] See Richard Smith, "Chinese Military," 140–44.
- [45] 科學革命與大分岔Joel Mokyr 和 Margaret Jacob 科學革命與大分岔Pomeranz, *Great Divergence*, 46, 68; Allen, "British," 14ff. Cf. Jacob, *Scientific*; Jacob and Stewart, *Practical*; Mokyr, *Lever*; Mokyr, *Enlightened*. 科學革命與大分岔
- [46] Rose, "Galileo's"; Drake, *Galileo*, 38–39.
- [47] Steele, "Military," 390; Barnett, "Mathematics," 97–98; and Steele, "Muskets," 361.
- [48] Robins, *New Principles*.

- [49] Euler, *Neue Grundsätze*.
- [50] Steele, "Napoleon," 456–57.
- [51] See Glendinning, "View."
- [52] Steele, "Napoleon," 457.
- [53] See Steele, "Rational," 291–92.
- [54] Steele, "Military," 368–69.
- [55] 史丹利·史丹利 Brett D. Steele 和 W. Johnson, "Robins."
- [56] 史丹利·史丹利 1850 年 50 年 1850 年 Ffoulkes, *Gun Founders*, 83–84. 史丹利·史丹利 Morris, *Foundations*, 206–15.
- [57] Morris, *Foundations*, 208.
- [58] *Army and Navy Chronicle* (Washington, DC), 8, no. 18 (2 May 1839): 277.
- [59] 史丹利·史丹利
- [60] 史丹利 "Battles That Changed History: Second Guangzhou (Canton) 1841" 史丹利 史丹利 in *Graphic Firing Table*, weblog, 11 May 2012, <http://firedirectioncenter.blogspot.com/2012/05/battles-that-changed-history-second.html>, 史丹利·史丹利 2014 年 1 月 7 日
- [61] Bingham, *Narrative*, 28–29.
- [62] Bingham, *Narrative*, 28–29.
- [63] McPherson, *War*, 254–55. 史丹利·史丹利 1812 年 史丹利·史丹利
- [64] Ouchterlony, *Chinese War*, 239.
- [65] McPherson, *War*, 248.
- [66] 史丹利 Belcher, *Narrative*, vol. 2, 142 and 192; Mackenzie, *Narrative*, 17.
- [67] Cunynghame, *Opium War*, 86.
- [68] Ouchterlony, *Chinese War*, 437.
- [69] 史丹利·史丹利
- [70] See, e.g., Wert, *Coming*, 170–71.
- [71] Buonaparte, "Memoir," cited in Steele, "Napoleon," 459.
- [72] Steele and Dorland, "Introduction," 28.
- [73] 史丹利·史丹利 Riehn 史丹利 1812 年 史丹利·史丹利 David Chandler 史丹利 *Campaigns of Napoleon* 135 年 史丹利·史丹利 Steele, "Napoleon," 462.
- [74] 史丹利 Steele, "Muskets," 372.
- [75] Steele, "Muskets," 373.
- [76] Yin Xiaodong, "Ming Qing"; Yin Xiaodong, "Huo qi"; Huang Yi-long, "Hong yi da pao yu Ming Qing."
- [77] 史丹利 Andrade, *Lost Colony*, 220.

- [78] Steele, "Muskets," 376-77.
- [79] Bernard and Hall, Narrative, vol. 1, 262.
- [80] Bernard and Hall, Narrative, vol. 1, 334.
- [81] 自我與他者之關係——以「自我」為例 Kuo and Liu, "Self," 497.
- [82] 藝術與政治——以「1842年25日」為例——..... Buchanan, "Art," 265.
- [83] Cocroft, Dangerous, 37. 英國海軍部與美國海軍部之關係 Benjamin Thompson 與 德國海軍部之關係 Mauskopf, "Rumford."
- [84] Cocroft, Dangerous, 45.
- [85] WZC, 291-92.
- [86] Bingham, Narrative, 28-29.
- [87] Bernard and Hall, Narrative, vol. 1, 347.
- [88] Cocroft, Dangerous, 54-61.
- [89] 英國海軍部與美國海軍部之關係 Lloyd and Craig, "Congreve's," 427.
- [90] Werrett, "William," 48.
- [91] George Elphinstone, Viscount Keith, Werrett, "William," 44.
- [92] Werrett, "William," 44.
- [93] 英國海軍部與美國海軍部之關係 Herson, "French."
- [94] Bernard and Hall, Narrative, vol. 1, 271.
- [95] McPherson, War, 68.
- [96] McPherson, War, 93.
- [97] Bernard and Hall, Narrative, 334.
- [98] "英國海軍部與美國海軍部之關係" Mackenzie, Narrative, 110. 英國海軍部與美國海軍部之關係 Bernard and Hall, Narrative, vol. 1, 406; and "Report of Major General J. H. Schoedde on Attack of Chin-keang-foo, 21 July 1842, Chin-keang-foo," Asiatic Journal and Monthly Register for British India, China, and Australasia 39 (1842): 363. 英國海軍部與美國海軍部之關係 "Bengal Governmental Notifications, Being Extracts of Dispatches . . . from Sir Hugh Gough and Sir Le Fleming Senhouse Respecting Operation Before Canton," Chinese Repository 10 (1841): 541.
- [99] Bingham, Narrative, 24-25.

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1800—1875 “[\[46\]](#)

1945年12月，美国、英国、法国、苏联四国在莫斯科召开外长会议，讨论战后欧洲安全与合作问题。会议期间，美国代表马歇尔提出“马歇尔计划”，旨在通过提供经济援助帮助欧洲国家重建经济，防止共产主义的蔓延。这一计划得到了广泛支持，并于1947年正式实施。

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[50] 18 1815
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[52] [53]

[54]

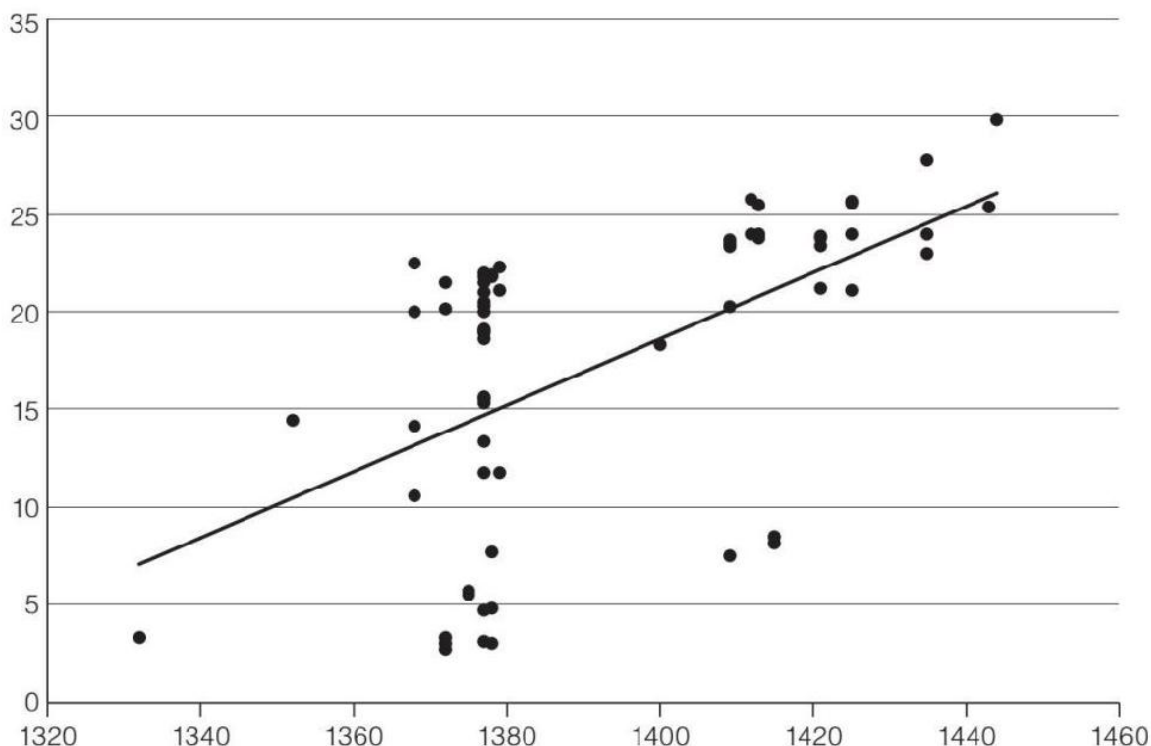
1846

১৮২৮ সালে ব্রিটিশ সরকার কর্তৃক বারাকপুর-টিতাগুর
 রেললাইন নির্মাণের সিদ্ধান্ত নেওয়া হয়। [55] ১৮২৮
 সালে ব্রিটিশ সরকার কর্তৃক বারাকপুর-টিতাগুর
 রেললাইন নির্মাণের সিদ্ধান্ত নেওয়া হয়।

·Goluk Chunder.....” [56]

“” [57] 1940 “” “” 0.02% 1842 0.19%——4

1842 “” [58]



3 1300—1450

1440 15 “Late Medieval Divergence”

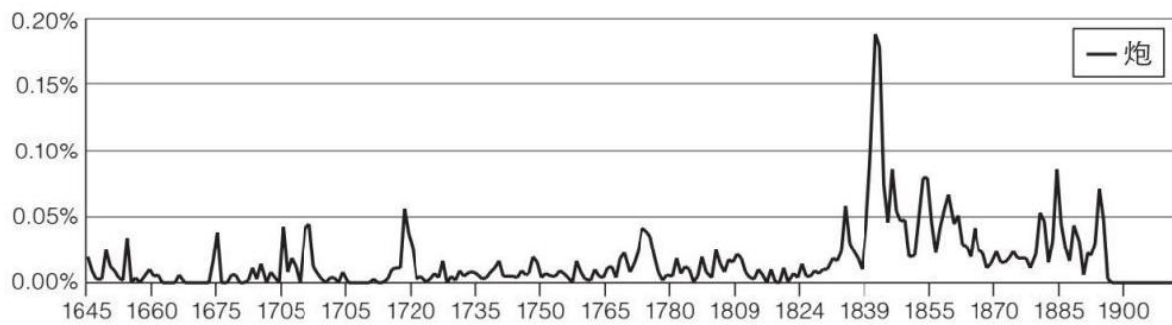


图4 1644—1911年间“炮”

图4展示了1644—1911年间“炮”的百分比变化。从图中可以看出，1842年“炮”的百分比达到了0.19%，这是整个时期的最高值。在此之前，百分比一直较低，且波动较大。1842年之后，百分比有所下降，但仍保持在一个相对较高的水平，直到1911年。

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“[79] 1950年，中國政府宣佈，凡在華僑民，不論其是否持有護照，均應遵守中國法律，並不得從事任何有損國家利益之行為。此項規定，旨在維護國家主權與領土完整，並確保社會秩序之穩定。[80]

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1950年

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- [1] Rawlinson, China's, 21.
- [2] Hsü, Rise, 193.
- [3] Fairbank and Goldman, China; Hsu, China; Wright, History of China; Tanner, China; Rossabi, A History; and the excellent Elleman and Paine, Modern China. Spence, Search; and Dillon, China.
- [4] Polachek, Inner; Rawlinson, China's; Wakeman, Strangers; Chen, Lin Tse-Hsü; Richard Smith, "Reform"; Liu, "Beginnings"; Mitchel, "Wei Yuan"; Wang, "Transferring."
- [5] Mackenzie, Narrative, 157.
- [6] Mackenzie, Narrative, 75-76.
- [7] Murray, Doings, 20-21.
- [8] Anonymous, "Expedition to China," esp. 621.
- [9] Anonymous, "Expedition to China," esp. 621-22. Cf. W. Parker, Rear Admiral, "Report on the Capture of Amoy," 31 August 1841, in "Official Reports of the Capture of Amoy," Chinese Repository (Canton) 11 (January-December 1842): 148-57, Parker report at 152-55, see esp. 154.
- [10] Murray, Doings, 52-53.
- [11] Murray, Doings, 156-57.
- [12] Murray, Doings, 156-57.
- [13] Murray, Doings, 117.
- [14] Murray, Doings, 118.
- [15] Bernard and Hall, Narrative, vol. 2, 226.
- [16] Cunynghame, Opium War, 51-52.

[17] Gong Zhenlin, in Wei Yuan et al., *Hai guo tu zhi*, juan 86, cited in SCC4 pt. 2, 429–30.

[18] 中國通商口岸開埠情形記略 SCC4 pt. 2, 430.

[19] Murray, *Doings*, 156–57.

[20] Murray, *Doings*, 156–57.

[21] 中國通商口岸開埠情形記略 Chen, Lin Tse-Hsü 中國通商口岸開埠情形記略 Polachek, Inner; and Chang, Commissioner 中國 Leonard, Wei.

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[39] Rawlinson, *China’s*, 19–20.

[40] Rawlinson, *China’s*, 21.

[41] 中國 Rawlinson, *China’s*, 20.

[42] SCC5 pt. 7, 412.

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[44] Rawlinson, *China’s*, 20.

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- [47] 王Wang, “Discovering,” 41.
- [48] Wang, “Discovering,” 39
- [49] Ding, Yan pao, juan 4, 16v.
- [50] 王Wang, “Transferring”; and Wang, “Discovering.”
- [51] Church, Dynamics, 91–93.
- [52] Wang, “Discovering,” 43–44.
- [53] Zheng Fuguang, Huo lun.
- [54] Wang, “Discovering.”
- [55] Wang, “Discovering,” 41.
- [56] Calcutta Gazette, 17 January 1828, 王Sarkar, “Technological,” 93.
- [57] Hsü, Rise, 193.
- [58] 陳Chen, Lin Tse-Hsü, 54.
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- [61] Rawlinson, China’s, 21.
- [62] Rawlinson, China’s, 23.
- [63] 范Chuannan, “Gong ma.”
- [64] 王Hsin-pao Chang 王Chang, Commissioner, 214–15.
- [65] 王Leonard, Wei; Kennedy, Arms, esp. 18–23; Liu, “Beginnings,” esp. 7–10.
- [66] 王Lovell, Opium, 165.
- [67] Lovell, Opium, 206–7.
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- [69] 王Rawski, Last, 122.
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- [71] Polachek, Inner, 273.
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Doner

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[80] Anonymous, "Napoleon's," 33.

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1809—1874 [32]

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1894年10月17日，*Pall Mall Gazette*刊登了J. J. Reed爵士的来信，信中写道：

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“我们……”

“我们……”

“我们……”……[66]

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George Ballard“……”[67]……[68]……[69]

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1894年9月17日，*Battle of Yalu River*……

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[1] “ 中 國 ” 中 國 軍 事 現 狀 與 未 來 展 望 Liu, “Beginnings,” 11. 中 國 軍 事 現 狀 與 未 來 展 望 Wang, “Transferring,” 14-51.

[2] Elman, “Naval”; Wang, “Transferring”; Meng Yue, “Hybrid”; and Fung, “Testing.”

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[4] 19 中 國 軍 事 現 狀 與 未 來 展 望 “ 中 國 軍 事 現 狀 與 未 來 展 望 ” Greatrex, “Comparative,” 101. Elleman, Modern, 33.

[5] Richard Smith, “Employment.”

[6] Meng Yue, “Hybrid,” 16.

[7] Fung, “Testing”; Elman, “Naval”; Meng Yue, “Hybrid; and Wang, “Transferring.” Wright, Last Stand.

[8] 1600 中 國 軍 事 現 狀 與 未 來 展 望 1644 中 國 軍 事 現 狀 與 未 來 展 望 1636 中 國 軍 事 現 狀 與 未 來 展 望 1911 中 國 軍 事 現 狀 與 未 來 展 望

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- [21] 鄭Zheng, "Loyalty," 59.
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- [37] Meng Yue, "Hybrid," 16-17.
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- [45] Wang, "Transferring," 172.
- [46] John George Dunn, cited in Pong, "China's," 347.
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- [48] 彭Pong, "China's," 348.
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- [55] Matsumoto, Technology, 14, and tables on 13 and 15.
- [56] 德Hashimoto, "Introducing." 19 德Ma, "Zhong-Ri."
- [57] Meng Yue, "Hybrid," 16-17; Kamiki, "Progress."
- [58] 德Broeze, "Transfer."
- [59] Broeze, "Transfer."
- [60] Pong, "Keeping"; Wang, "Transferring," 261.
- [61] Pong, "Keeping," 122.
- [62] Wang, "Transferring," 247.
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- [65] 德Elman, "Naval," 318; and Fung, "Ch'ing Policy," 137. 德Hammersmith, "Sino." 德Hammersmith 德Paine, Sino.
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- [80] 潘·麥吉芬 Paine, Sino, 180.
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- [85] Paine, Sino, 180.
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- [90] McGiffin, "Battle," 601.
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- [105] Paine, Sino, 218.
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- [108] 潘 Pong, "China's," esp. 357-59.
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- [112] Richard Smith, "Employment," 132. McCord argues similarly. McCord, Power, 19.
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- [117] Perkins, "Government"; Brandt, Ma, and Rawski, "From Divergence," 79-80 and Table 3. 中國經濟的變遷與挑戰Halsey, "Money," 394-95.
- [118] Tanzi and Schuknecht, Public, 25.
- [119] Horowitz, "Beyond," 162.
- [120] 何, Paths.
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- [126] Broadbridge, "Shipbuilding," 602.
- [127] Richard Smith, "Reflections," 20.
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- [129] Kuo and Liu, "Self," 529-31.
- [130] Kuo and Liu, "Self," 529-32.
- [131] Kuo and Liu, "Self," 530.
- [132] Morris, Foundations.
- [133] Curtis, Yankees.
- [134] 中國經濟的變遷與挑戰Denny, Their Arrows, esp. 55-57.
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[136] Silbey, Boxer ("A captain Taussig wrote about the stores: . . . There were magazines containing immense stocks of both black and smokeless powder"); Preston, Boxer, 234-35 and 162-63.

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[138] Gordin, "Modernization."

[139] Home, "General," 267-68.

[140] Waters, "General," 219.

[141] Waters, "General," 220.

[142] " 'War' Revised at Manhattan: The Great Pyro-Spectacle Now to Be Seen in Its Best Form," New York Tribune, 19 July 1895, 2. 大英火藥公司 The Pain Pyro-Spectacle Company 大英火藥公司 Pain and Neville, Pain's.

[143] "Pain's 'China and Japan': Successful Opening of His Great Spectacle at Savin Rock," New Haven Register, 23 June 1896, 10.

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Mark Elvin——“”17

Rudolf Jakob Camerer
1694*De sexu plantarum epistola*
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中国人口数量庞大，且人口结构复杂，人口老龄化问题日益突出。随着人口老龄化的加剧，老年人的生活质量和健康状况成为社会关注的焦点。政府和社会各界应共同努力，采取有效措施，提高老年人的生活质量和健康状况，实现人口老龄化与经济社会的协调发展。

- [24] 想像的共同体Imagined CommunitiesHart,Imagined.
- [25] Elvin, “Confused,” 366.
- [26] 移动中的中国Cook, “Moving”; see also Cook, Matters.
- [27] Goldstone, “Europe’s”; Goldstone, “Efflorescences.”
- [28] Most famously Aron, marxisme.
- [29] 自我Kuo and Liu, “Self,” 534. 中国Pong, Shen.
- [30] 自我Kuo and Liu, “Self,” 534.
- [31] Grueber et al., “2014.”
- [32] Hu Angang, China, xix. David Kang 霸权hegemony
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从1340年到1839年，中国发生战争318次，欧洲发生战争1839次。从1840年到1908年，中国发生战争1839次，欧洲发生战争1839次。

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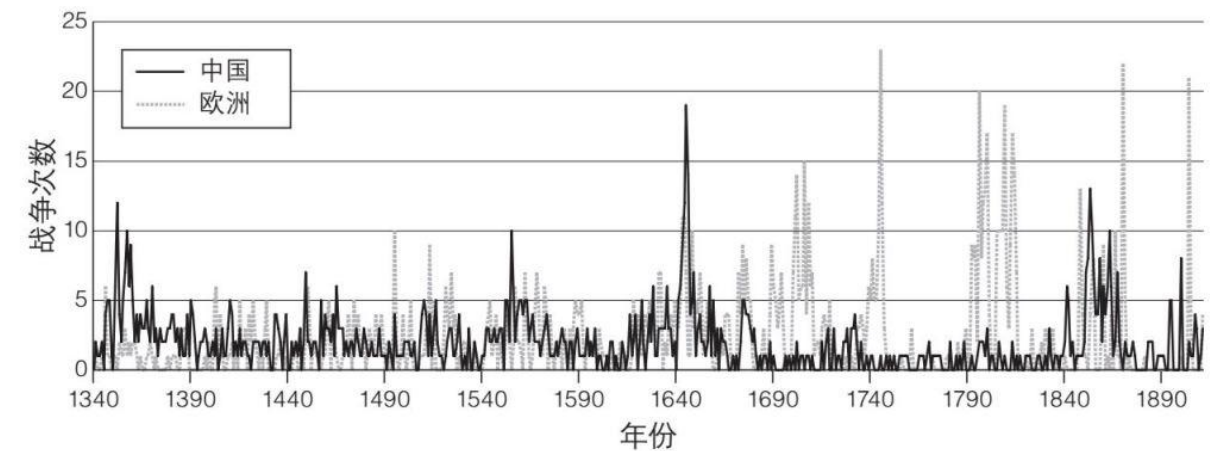
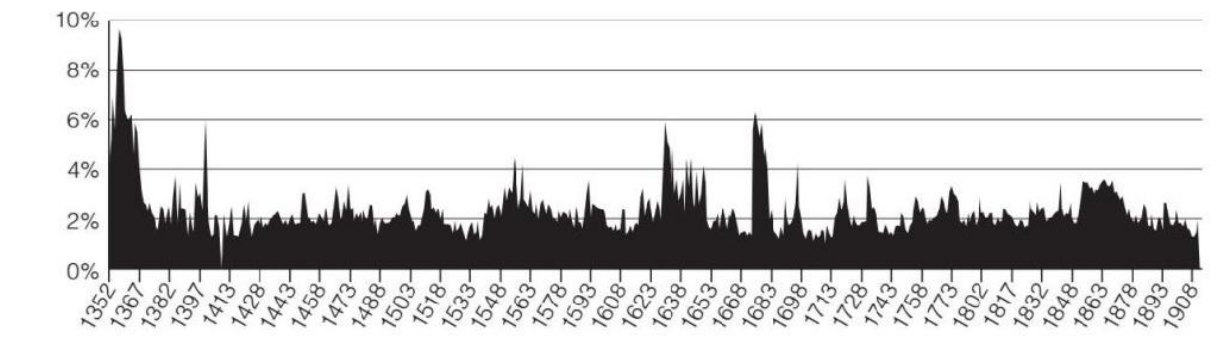


图2 战争次数

从1340年到1839年，中国发生战争318次，欧洲发生战争1839次。从1840年到1908年，中国发生战争1839次，欧洲发生战争1839次。



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The Gunpowder Age: China, Military Innovation, and the Rise of the West in
World History by Tonio Andrade

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